DGA Dietary Guidelines for Americans

2020 - 2025

Make Every Bite Count With the *Dietary Guidelines*

USDA

DEPARTMENT OF HEALTH & HUMAN SERVICES • USA

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Message From the Secretaries

We are pleased to present the *Dietary Guidelines for Americans, 2020-2025*. This edition marks the first time the Guidelines provide recommendations by life stage, from birth through older adulthood.

Each stage of life is distinct and has unique needs that affect health and disease risk. Early food preferences influence food and beverage choices later. And the science has evolved to focus on the importance of a healthy dietary pattern over time. The science also shows it's never too late to start and maintain a healthy dietary pattern, which can yield health benefits in the short term and cumulatively over years. This new edition of the *Dietary Guidelines* includes specific recommendations for all life stages, now including infants and toddlers, and pregnant and lactating women. We are excited this is the first edition to provide guidance for every life stage.

This edition of the *Dietary Guidelines* is grounded in robust scientific reviews of the current body of evidence on key nutrition and health topics for each life stage. We thank the 20 distinguished scientists on the 2020 Dietary Guidelines Advisory Committee for their expertise and dedication in conducting an independent scientific review that was characterized by more transparency and public participation throughout the process than ever before. The Committee's work culminated in a comprehensive scientific report on the current state of nutrition science and provided advice to the Departments for our development of this 9th edition of the *Dietary Guidelines*. The Committee also included important considerations for future research, such as a need to reconsider the Dietary Reference Intakes. The U.S. and Canadian Dietary Reference Intake Steering Committees are currently developing plans to re-examine energy, protein, fat, and carbohydrate–the timeline for these macronutrient reviews has not been established. USDA and HHS are looking forward to jointly funding the work to help guide our Departments' research agendas in the coming years.

With the science must come practice—that is, making food and beverage choices that align with the *Dietary Guidelines*. Using the new edition of the *Dietary Guidelines*, we hope Americans can find ways to "Start Simple" and incorporate modest changes each day that push Americans closer to meeting the recommendations. It's more important than ever to make healthy eating a priority in the United States. With the release of the *Dietary Guidelines for Americans*, 2020-2025, we have an important call to action for you as health professionals and policymakers. We are asking you to help the public "make every bite count with the *Dietary Guidelines for Americans*." Help people make food and beverage choices that are rich in nutrition—individual choices that can become a healthy routine over time, choices they can enjoy in good health for many years to come.

Thank you for all you do to help Americans make strides toward aligning closer to the *Dietary Guidelines* as we all work together to help the public lead healthier lives.

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Executive Summary

The foods and beverages that people consume have a profound impact on their health. The scientific connection between food and health has been well documented for many decades, with substantial and increasingly robust evidence showing that a healthy lifestyle—including following a healthy dietary pattern—can help people achieve and maintain good health and reduce the risk of chronic diseases throughout all stages of the lifespan: infancy and toddlerhood, childhood and adolescence, adulthood, pregnancy and lactation, and older adulthood. The core elements of a healthy dietary pattern are remarkably consistent across the lifespan and across health outcomes.

Since the first edition was published in 1980, the *Dietary Guidelines for Americans* have provided science-based advice on what to eat and drink to promote health, reduce risk of chronic disease, and meet nutrient needs. Publication of the *Dietary Guidelines* is required under the 1990 National Nutrition Monitoring and Related Research Act, which states that at least every 5 years, the U.S. Departments of Agriculture (USDA) and of Health and Human Services (HHS) must jointly publish a report containing nutritional and dietary information and guidelines for the general public. The statute (Public Law 101-445, 7 United States Code 5341 et seq.) requires that the *Dietary Guidelines* be based on the preponderance of current scientific and medical knowledge. The 2020-2025 edition of the *Dietary Guidelines* builds from the 2015 edition, with revisions grounded in the *Scientific Report of the 2020 Dietary Guidelines Advisory Committee* and consideration of Federal agency and public comments.

The *Dietary Guidelines* is designed for policymakers and nutrition and health professionals to help all individuals and their families consume a healthy, nutritionally adequate diet. The information in the *Dietary Guidelines* is used to develop, implement, and evaluate Federal food, nutrition, and health policies and programs. It also is the basis for Federal nutrition education materials designed for the public and for the nutrition education components of USDA and HHS nutrition programs. State and local governments, schools, the food industry, other businesses, community groups, and media also use *Dietary Guidelines* information to develop programs, policies, and communication for the general public.

The aim of the *Dietary Guidelines* is to promote health and prevent disease. Because of this public health orientation, the *Dietary Guidelines* is not intended to contain clinical guidelines for treating chronic diseases. Chronic diseases result from a complex mix of genetic, biological, behavioral, socioeconomic, and environmental factors, and people with these conditions have unique health care requirements that require careful oversight by a health professional. The body of scientific evidence on diet and health reviewed to inform the *Dietary Guidelines* is representative of the U.S. population—it includes people who are healthy, people at risk for diet-related chronic conditions and diseases, such as cardiovascular disease, type 2 diabetes, and obesity, and some people who are living with one or more of these diet-related chronic illnesses. At the same time, it is essential that Federal agencies, medical organizations, and health professionals adapt the *Dietary Guidelines* to meet the specific needs of their patients as part of an individual, multifaceted treatment plan for the specific chronic disease.

Consistent and Evolving

Although many recommendations have remained relatively consistent over time, the *Dietary Guidelines* also has built upon previous editions and evolved as scientific knowledge has grown. The *Dietary Guidelines for Americans, 2020-2025* reflects this in three important ways:

The first is its recognition that diet-related chronic diseases, such as cardiovascular disease, type 2 diabetes, obesity, and some types of cancer, are very prevalent among Americans and pose a major public health problem. Today, more than half of adults have one or more diet-related chronic diseases. As a result, recent editions of the *Dietary Guidelines* have focused on healthy individuals, as well as those with overweight or obesity and those who are at risk of chronic disease. A fundamental premise of the *2020-2025 Dietary Guidelines* is that just about everyone, no matter their health status, can benefit from shifting food and beverage choices to better support healthy dietary patterns.

The second is its focus on dietary patterns. Researchers and public health experts, including registered dietitians, understand that nutrients and foods are not consumed in isolation. Rather, people consume them in various combinations over time—a dietary pattern—and these foods and beverages act synergistically to affect health. The *Dietary Guidelines for Americans, 2015-2020* puts this understanding into action by focusing its recommendations on consuming a healthy dietary pattern. The *2020-2025 Dietary Guidelines* carries forward this emphasis on the importance of a healthy dietary pattern as a whole—rather than on individual nutrients, foods, or food groups in isolation.

The third is its focus on a lifespan approach. This edition of the *Dietary Guidelines* highlights the importance of encouraging healthy dietary patterns at every life stage from infancy through older adulthood. It provides recommendations for healthy dietary patterns by life stage, identifying needs specific to each life stage and considering healthy dietary pattern characteristics that should be carried forward into the next stage of life. For the first time since the 1985 edition, the *2020-2025 Dietary Guidelines* includes recommendations for healthy dietary patterns for infants and toddlers.

The Guidelines

The *2020-2025 Dietary Guidelines* provides four overarching Guidelines that encourage healthy eating patterns at each stage of life and recognize that individuals will need to make shifts in their food and beverage choices to achieve a healthy pattern. The Guidelines also explicitly emphasize that a healthy dietary pattern is not a rigid prescription. Rather, the Guidelines are a customizable framework of core elements within which individuals make tailored and affordable choices that meet their personal, cultural, and traditional preferences. Several examples of healthy dietary patterns that translate and integrate the recommendations in overall healthy ways to eat are provided. The Guidelines are supported by Key Recommendations that provide further guidance on healthy eating across the lifespan.

The Guidelines

Make every bite count with the *Dietary Guidelines for Americans*. Here's how:

1 Follow a healthy dietary pattern at every life stage.

At every life stage—infancy, toddlerhood, childhood, adolescence, adulthood, pregnancy, lactation, and older adulthood—it is never too early or too late to eat healthfully.

- **For about the first 6 months of life,** exclusively feed infants human milk. Continue to feed infants human milk through at least the first year of life, and longer if desired. Feed infants iron-fortified infant formula during the first year of life when human milk is unavailable. Provide infants with supplemental vitamin D beginning soon after birth.
- **At about 6 months,** introduce infants to nutrient-dense complementary foods. Introduce infants to potentially allergenic foods along with other complementary foods. Encourage infants and toddlers to consume a variety of foods from all food groups. Include foods rich in iron and zinc, particularly for infants fed human milk.
- **From 12 months through older adulthood,** follow a healthy dietary pattern across the lifespan to meet nutrient needs, help achieve a healthy body weight, and reduce the risk of chronic disease.

2 Customize and enjoy nutrient-dense food and beverage choices to reflect personal preferences, cultural traditions, and budgetary considerations.

A healthy dietary pattern can benefit all individuals regardless of age, race, or ethnicity, or current health status. The *Dietary Guidelines* provides a framework intended to be customized to individual needs and preferences, as well as the foodways of the diverse cultures in the United States.

3 Focus on meeting food group needs with nutrient-dense foods and beverages, and stay within calorie limits.

An underlying premise of the *Dietary Guidelines* is that nutritional needs should be met primarily from foods and beverages—specifically, nutrient-dense foods and beverages. Nutrient-dense foods provide vitamins, minerals, and other health-promoting components and have no or little added sugars, saturated fat, and sodium. A healthy dietary pattern consists of nutrient-dense forms of foods and beverages across all food groups, in recommended amounts, and within calorie limits.

The core elements that make up a healthy dietary pattern include:

- **Vegetables of all types**—dark green; red and orange; beans, peas, and lentils; starchy; and other vegetables
- **Fruits,** especially whole fruit
- **Grains,** at least half of which are whole grain
- **Dairy,** including fat-free or low-fat milk, yogurt, and cheese, and/or lactose-free versions and fortified soy beverages and yogurt as alternatives
- **Protein foods,** including lean meats, poultry, and eggs; seafood; beans, peas, and lentils; and nuts, seeds, and soy products
- **Oils,** including vegetable oils and oils in food, such as seafood and nuts

4

Limit foods and beverages higher in added sugars, saturated fat, and sodium, and limit alcoholic beverages.

At every life stage, meeting food group recommendations—even with nutrient-dense choices—requires most of a person's daily calorie needs and sodium limits. A healthy dietary pattern doesn't have much room for extra added sugars, saturated fat, or sodium—or for alcoholic beverages. A small amount of added sugars, saturated fat, or sodium can be added to nutrient-dense foods and beverages to help meet food group recommendations, but foods and beverages high in these components should be limited. Limits are:

- **Added sugars**—Less than 10 percent of calories per day starting at age 2. Avoid foods and beverages with added sugars for those younger than age 2.
- **Saturated fat**—Less than 10 percent of calories per day starting at age 2.
- **Sodium**—Less than 2,300 milligrams per day—and even less for children younger than age 14.
- **Alcoholic beverages**—Adults of legal drinking age can choose not to drink, or to drink in moderation by limiting intake to 2 drinks or less in a day for men and 1 drink or less in a day for women, when alcohol is consumed. Drinking less is better for health than drinking more. There are some adults who should not drink alcohol, such as women who are pregnant.

Terms to Know

Several terms are used throughout the *Dietary Guidelines* and are essential to understanding the Guidelines and putting them into action. These terms are defined here:

- **Dietary pattern:** It is the combination of foods and beverages that constitutes an individual's complete dietary intake over time. This may be a description of a customary way of eating or a description of a combination of foods recommended for consumption.

- **Nutrient dense:** Nutrient-dense foods and beverages provide vitamins, minerals, and other health-promoting components and have little added sugars, saturated fat, and sodium. Vegetables, fruits, whole grains, seafood, eggs, beans, peas, and lentils, unsalted nuts and seeds, fat-free and low-fat dairy products, and lean meats and poultry—when prepared with no or little added sugars, saturated fat, and sodium—are nutrient-dense foods.

For most individuals, no matter their age or health status, achieving a healthy dietary pattern will require changes in food and beverage choices. Some of these changes can be accomplished by making simple substitutions, while others will require greater effort to accomplish. This edition of the *Dietary Guidelines* presents overall guidance on choosing nutrient-dense foods and beverages in place of less healthy choices and also discusses special nutrition considerations for individuals at each life stage—infants and toddlers, children and adolescents, adults, women who are pregnant or lactating, and older adults.

Although individuals ultimately decide what and how much to consume, their personal relationships; the settings in which they live, learn, work, play, and gather; and other contextual factors—including their ability to consistently access healthy and affordable food—strongly influence their choices. Health professionals, communities, businesses and industries, organizations, government, and other segments of society all have a role to play in supporting individuals and families in making choices that align with the *Dietary Guidelines* and ensuring that all people have access to a healthy and affordable food supply. Resources, including Federal programs that support households, regardless of size and make-up, in choosing a healthy diet and improving access to healthy food, are highlighted throughout this edition of the *Dietary Guidelines for Americans.*

Introduction

Setting the Stage

The foods and beverages that people consume have a profound impact on their health. The scientific connection between food and health has been well documented for many decades, with substantial evidence showing that healthy dietary patterns can help people achieve and maintain good health and reduce the risk of chronic diseases throughout all stages of the lifespan. Yet, Federal data show that from the first edition of the *Dietary Guidelines for Americans* in 1980 through today, Americans have fallen far short of meeting its recommendations, and diet-related chronic disease rates have risen to pervasive levels and continue to be a major public health concern.

The *Dietary Guidelines* is an important part of a complex, multifaceted approach to promote health and reduce chronic disease risk. The *Dietary Guidelines* provides science-based advice on what to eat and drink to promote health, help reduce risk of chronic disease, and meet nutrient needs. The *Dietary Guidelines* is the foundation of Federal food, nutrition, and health policies and programs. An important audience is health professionals and nutrition program administrators who work with the general public to help them consume a healthy and nutritionally adequate diet and establish policies and services to support these efforts. Comprehensive, coordinated strategies built on the science-based foundation of the *Dietary Guidelines*—and a commitment to drive these strategies over time across sectors and settings—can help all Americans consume healthy dietary patterns, achieve and maintain good health, and reduce the risk of chronic diseases.

Grounded in Science and Focused on Public Health

The U.S. Departments of Agriculture (USDA) and of Health and Human Services (HHS) update the *Dietary Guidelines* at least every 5 years, based on the current science. A fundamental premise of the *Dietary Guidelines* is that everyone, no matter their age, race, or ethnicity, economic circumstances, or health status, can benefit from shifting food and beverage choices to better support healthy dietary patterns.

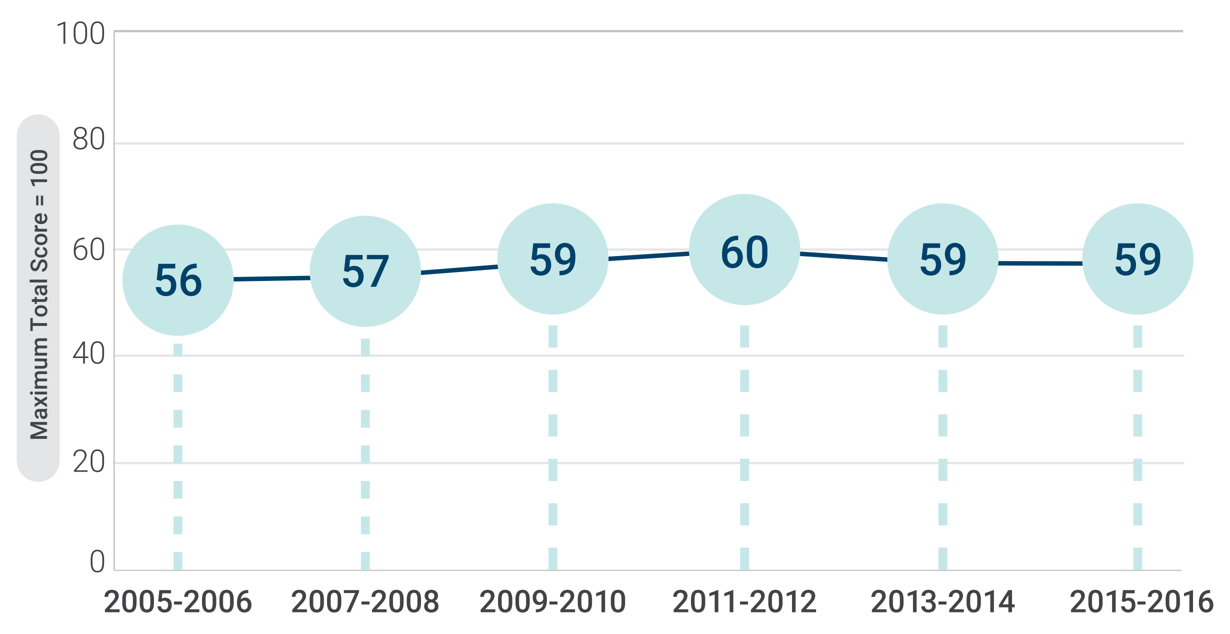
To make sure that the dietary advice provided in the *Dietary Guidelines* is aimed at improving public health, the science used to inform the Guidelines has examined diet through a lens of health promotion and disease prevention and considered various segments of the United States population, including ethnic populations who have disproportionately and/or historically been affected by diet-related disparities. This means that priority has been placed on scientific studies that examine the relationship between diet and health across all life stages, in men, women, and children from diverse racial and ethnic backgrounds, who are healthy or at risk of chronic disease.

Over time, eating patterns in the United States have remained far below *Dietary Guidelines* recommendations (**Figure I-1**). Concurrently, it has become increasingly clear that diet-related chronic diseases, such as cardiovascular disease, type 2 diabetes, obesity, liver disease, some types of cancer, and dental caries, pose a major public health problem for Americans. Today, 60 percent of adults have one or more diet-related chronic diseases (**Table I-1**). Given its aim to prevent further disease incidence by promoting health and reducing chronic disease risk, the *Dietary Guidelines* focuses on the general public, including healthy individuals, as well as those with overweight or obesity and those who are at risk of chronic disease. The importance of following the *Dietary Guidelines* across all life stages has been brought into focus even more with the emergence of COVID-19, as people living with diet-related chronic conditions and diseases are at an increased risk of severe illness from the novel coronavirus.

Grounded in the current body of scientific evidence on diet and health that is relevant to all Americans, the *Dietary Guidelines* is a critically important tool for health professionals, policymakers, and many other professionals. It is designed to help people make food and beverage choices all through life that are enjoyable and affordable and that also promote health and help prevent chronic disease.

Figure I-1

Adherence of the U.S. Population to the *Dietary Guidelines* Over Time, as Measured by the Average Total Healthy Eating Index-2015 Scores



NOTE: HEI-2015 total scores are out of 100 possible points. A score of 100 indicates that recommendations on average were met or exceeded. A higher total score indicates a higher quality diet.

Data Source: Analysis of What We Eat in America, National Health and Nutrition Examination Survey (NHANES) data from 2005-2006 through 2015-2016, ages 2 and older, day 1 dietary intake data, weighted.

Table I-1

Facts About Nutrition-Related Health Conditions in the United States

HEALTH CONDITIONS	STATISTICS
Overweight and Obesity	• About 74% of adults are overweight or have obesity. • Adults ages 40 to 59 have the highest rate of obesity (43%) of any age group with adults 60 years and older having a 41% rate of obesity. • About 40% of children and adolescents are overweight or have obesity; the rate of obesity increases throughout childhood and teen years.
Cardiovascular Disease (CVD) and Risk Factors: • Coronary artery disease • Hypertension • High LDL and total blood cholesterol • Stroke	• Heart disease is the leading cause of death. • About 18.2 million adults have coronary artery disease, the most common type of heart disease. • Stroke is the fifth leading cause of death. • Hypertension, high LDL cholesterol, and high total cholesterol are major risk factors in heart disease and stroke. • Rates of hypertension and high total cholesterol are higher in adults with obesity than those who are at a healthy weight. • About 45% of adults have hypertension.[a] • More Black adults (54%) than White adults (46%) have hypertension. • More adults ages 60 and older (75%) than adults ages 40 to 59 (55%) have hypertension. • Nearly 4% of adolescents have hypertension.[b] • More than 11% of adults have high total cholesterol, ≥240 mg/dL. • More women (12%) than men (10%) have high total cholesterol, ≥240 mg/dL. • 7% of children and adolescents have high total cholesterol, ≥200 mg/dL.
Diabetes	• Almost 11% of Americans have type 1 or type 2 diabetes. • Almost 35% of American adults have prediabetes, and people 65 years and older have the highest rate (48%) compared to other age groups. • Almost 90% of adults with diabetes also are overweight or have obesity. • About 210,000 children and adolescents have diabetes, including 187,000 with type 1 diabetes. • About 6-9% of pregnant women develop gestational diabetes.
Cancer[c] • Breast Cancer • Colorectal Cancer	• Colorectal cancer in men and breast cancer in women are among the most common types of cancer. • About 250,520 women will be diagnosed with breast cancer this year. • Close to 5% of men and women will be diagnosed with colorectal cancer at some point during their lifetime. • More than 1.3 million people are living with colorectal cancer. • The incidence and mortality rates are highest among those ages 65 and older for every cancer type.
Bone Health and Muscle Strength	• More women (17%) than men (5%) have osteoporosis. • 20% of older adults have reduced muscle strength. • Adults over 80 years, non-Hispanic Asians, and women are at the highest risk for reduced bone mass and muscle strength.

[a] For adults, hypertension is defined as systolic blood pressure (SBP) >130 mm Hg and/or a diastolic blood pressure (DBP) >90 mm Hg.

[b] For children, hypertension was defined using the 2017 American Academy of Pediatrics (AAP) Clinical Practice Guideline.

[c] The types of cancer included here are not a complete list of all diet- and physical activity-related cancers.

A Spotlight on Dietary Patterns

Although many of its recommendations have remained relatively consistent over time, the *Dietary Guidelines* has evolved as scientific knowledge has grown. Early *Dietary Guidelines* editions used evidence that examined the relationships between individual nutrients, foods, and food groups and health outcomes. In recent years, researchers, public health experts, and registered dietitians have acknowledged that nutrients and foods are not consumed in isolation. Rather, people consume them in various combinations over time—a dietary pattern—and these foods and beverages act synergistically to affect health.

The *2015-2020 Dietary Guidelines* put this understanding into action by focusing its recommendations on consuming a healthy dietary pattern. The *2020-2025 Dietary Guidelines* carries forward this emphasis on the importance of a healthy dietary pattern as a whole—rather than on individual nutrients or foods in isolation.

Serving as a framework, the Guidelines' dietary patterns approach enables policymakers, programs, and health professionals to help people personalize their food and beverage choices to accommodate their wants and needs, food preferences, cultural traditions and customs, and budgetary considerations.

Healthy Dietary Patterns at Every Life Stage

The *2020-2025 Dietary Guidelines* takes the dietary patterns approach one step further by focusing on the importance of encouraging healthy dietary patterns at every stage of life, from birth to older adulthood. It provides recommendations for healthy dietary patterns by life stage, identifying needs specific to each life stage and considering healthy dietary pattern characteristics that should be carried forward into the next stage of life. And, for the first time since the 1985 edition, this edition of the *Dietary Guidelines* includes recommendations for infants and toddlers as well as continuing the emphasis on healthy dietary patterns during pregnancy and lactation.

This approach recognizes that each life stage is distinct—nutrient needs vary over the lifespan and each life stage has unique implications for food and beverage choices and disease risk. At the same time, it recognizes an important continuity. Because early food preferences influence later food choices, establishing a healthy dietary pattern early in life may have a beneficial impact on health promotion and disease prevention over the course of decades.

Dietary Guidelines for Americans: What It Is, What It Is Not

The *Dietary Guidelines* translates the current science on diet and health into guidance to help people choose foods and beverages that comprise a healthy and enjoyable dietary pattern—the "what" and "how much" of foods and beverages to consume to achieve good health, reduce risk of diet-related chronic diseases, and meet nutrient needs. The *Dietary Guidelines* is just one piece of the nutrition guidance landscape, however. Other guidance is designed to address requirements for the specific nutrients contained in foods and beverages or to address treatments for individuals who have a chronic disease. The following section describes the role of the *Dietary Guidelines* within this larger nutrition guidance landscape.

Quantitative Guidance on Foods, Not Nutrient Requirements

Nutrient requirements are established and updated by the National Academies of Sciences, Engineering, and Medicine. At the request of the U.S. and Canadian Federal Governments, the Academies set the quantitative requirements or limits—known as Dietary Reference Intakes (DRI)—on nutrients, which include macronutrients (i.e., protein, carbohydrates, and fats), vitamins and minerals (e.g., vitamin C, iron, and sodium), and food components (e.g., dietary fiber).

Because foods provide an array of nutrients and other components that have benefits for health, nutritional needs should be met primarily through foods. Thus, the *Dietary Guidelines* translates the Academies' nutrient requirements into food and beverage recommendations. The *Dietary Guidelines* recognizes, though, that in some cases, fortified foods and dietary supplements are useful when it is not possible otherwise to meet needs for one or more nutrients (e.g., during specific life stages such as pregnancy).

Health Promotion, Not Disease Treatment

At its core, the *Dietary Guidelines* has a public health mission—that is, health promotion and disease prevention. Medical and nutrition professionals may use or adapt the *Dietary Guidelines* to encourage their patients or clients to follow a healthy dietary pattern. The body of current scientific evidence on diet and health reviewed to inform the *Dietary Guidelines* included study participants who represent the U.S. population, including healthy individuals and people at risk of diet-related chronic conditions and diseases, such as cardiovascular disease, type 2 diabetes, or obesity, and some people who are living with a diet-related chronic illness.

Because of this public health orientation, the *Dietary Guidelines* is not intended to be a clinical guideline for treating chronic diseases. However, the *Dietary Guidelines* often has served as a reference for Federal, medical, voluntary, and patient care organizations as they develop clinical nutrition guidance tailored for people living with a specific medical condition. Chronic diseases result from a complex mix of genetic, biological, behavioral, socioeconomic, and environmental factors, and people with these conditions have unique health care requirements that require careful oversight by a health professional. Health professionals can adapt the *Dietary Guidelines* to meet the specific needs of their patients with chronic diseases, as part of a multi-faceted treatment plan.

Developing the *Dietary Guidelines for Americans*

The process to develop the *Dietary Guidelines* has evolved over time, in step with developments in nutrition science, public health, and best practices in scientific review and guidance development. USDA and HHS work together to determine the approach for each edition.

As stipulated by law, USDA and HHS must update the *Dietary Guidelines* at least every 5 years. The Guidelines must be grounded in the body of scientific and medical knowledge available at that time, not in individual studies or individual expert opinion. In establishing the process for the *2020-2025 Dietary Guidelines*, USDA and HHS considered and integrated recommendations from a comprehensive 2017 National Academies' study, *Review of the Process to Update the Dietary Guidelines*. Greater transparency figured prominently in the Academies' recommendations. As a result, in developing the 2020-2025 process, USDA and HHS made significant changes to increase transparency and public participation while maintaining the core element of scientific integrity.

One of these changes was the addition of a new stage at the beginning of the process. Thus, the 2020-2025 process consisted of four stages: (1) identify the topics

Stage 1:
IDENTIFY Topics and Supporting Scientific Questions

Stage 2:
APPOINT a Dietary Guidelines Advisory Committee to Review Evidence

Stage 3:
DEVELOP the *Dietary Guidelines*

Stage 4:
IMPLEMENT the *Dietary Guidelines*

and supporting scientific questions to be examined; (2) appoint a Dietary Guidelines Advisory Committee to review current scientific evidence; (3) develop the new edition of the *Dietary Guidelines*; and (4) implement the *Dietary Guidelines* through Federal programs. The following information provides an overview of the 4-stage process. More details are available at **DietaryGuidelines.gov**.

Stage 1: Identify Topics and Supporting Scientific Questions

The Departments added a new step of identifying topics and scientific questions to begin the process of developing the next *Dietary Guidelines*. This was done to promote a deliberate and transparent process, better define the expertise needed on the Committee, and ensure the scientific review conducted by the Committee would address Federal nutrition policy and program needs and help manage resources.

In consultation with agencies across the Federal Government, USDA and HHS identified potential topics and supporting scientific questions that were of greatest importance and relevance to Federal nutrition programs, policies, and consumer education priorities. Compared to all previous *Dietary Guidelines* processes, the topic areas for 2020-2025 expanded due to the added focus on infants and toddlers from birth through age 23 months, as well as women who are pregnant. The Agricultural Act of 2014 mandated that, beginning with the 2020-2025 edition, the *Dietary Guidelines* should expand to include dietary guidance for these populations. Thus, the topics and questions—and areas of expertise needed on the Committee—reflected this change.

The Departments posted the topics and questions publicly on **DietaryGuidelines.gov**, allowing the public and Federal agencies 30 days to view and provide comments. Following review of the comments, USDA and HHS posted the final topics and questions, along with the public call for nominations to the 2020 Committee. Having topics and questions identified upfront helped inform the public's nominations by defining which areas of nutrition expertise were needed on the Committee.

Stage 2: Appoint a Dietary Guidelines Advisory Committee To Review Current Scientific Evidence

In the second stage, the Secretaries of USDA and HHS appointed the Committee with the single, time-limited task of reviewing the *2015-2020 Dietary Guidelines*, examining the evidence on the selected nutrition and public health topics and scientific questions, and providing independent, science-based advice and recommendations to USDA and HHS. The 20 nationally recognized scientific experts appointed to the Committee represented a mix of practitioners, epidemiologists, scientists, clinical trialists, and others from every region of the United States.

The use of a Federal advisory committee is a commonly used best practice to ensure the Federal Government seeks sound, external scientific advice to inform decisions. The Committee's work concluded with its scientific report submitted to the Secretaries of USDA and HHS in June 2020.[1] This report was not a draft of the *Dietary Guidelines*; it was a scientific document that detailed the Committee's evidence review and provided advice to USDA and HHS.

The Committee was divided into six subcommittees to conduct its work: Dietary Patterns, Pregnancy and Lactation, Birth to Age 24 Months, Beverages and Added Sugars, Dietary Fats and Seafood, and Frequency of Eating. The Committee also formed one cross-cutting working group—Data Analysis and Food Pattern Modeling—to support work across the subcommittees.

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[1] Dietary Guidelines Advisory Committee. 2020. *Scientific Report of the 2020 Dietary Guidelines Advisory Committee: Advisory Report to the Secretary of Agriculture and the Secretary of Health and Human Services*. U.S. Department of Agriculture, Agricultural Research Service, Washington, DC.

The Committee's work had three defining characteristics: the use of three approaches to examine the evidence, the creation of transparent protocols before the evidence review began, and the development of scientific review conclusion statements for the scientific reviews conducted.

THREE APPROACHES TO EXAMINE THE EVIDENCE

The 2020 Committee used three state-of-the-art approaches to conduct its robust and rigorous reviews:

Data analysis: Using Federal, nationally representative data, this approach provided insights into current eating habits of the U.S. population and current diet-related chronic disease rates in the United States. These data helped make the *Dietary Guidelines* practical, relevant, and achievable.

The Committee used data analysis to address scientific questions that looked at current dietary patterns and beverage consumption, current intakes of food groups and nutrients, dietary components of public health concern, prevalence of nutrition-related chronic health conditions, and relationships between eating habits and achieving nutrient and food group recommendations.

Nutrition Evidence Systematic Review (NESR): Systematic reviews are research projects that follow meticulously defined protocols (i.e., plans) to answer clearly formulated scientific questions by searching for, evaluating, and synthesizing all relevant, peer-reviewed studies. Systematic reviews are considered a gold standard method to inform development of evidence-based guidelines by ensuring consideration of the strongest, most appropriate body of evidence available on a topic. USDA's Nutrition Evidence Systematic Review is a team of scientists who specializes in conducting systematic reviews focused on nutrition and disease prevention and evaluating scientific evidence on nutrition topics relevant to Federal policy and programs. NESR used its rigorous, protocol-driven methodology to support the Committee in conducting its systematic reviews. New to the 2020 process, USDA and HHS added a step for peer review of the systematic reviews by Federal scientists.

Food pattern modeling: This type of analysis illustrates how changes to the amounts or types of foods and beverages in a dietary pattern might affect meeting nutrient needs across the U.S. population.

The Committee used this method to assess potential changes to the USDA Dietary Patterns, which help meet the DRIs set by the National Academies, while taking into consideration current consumption in the United States and the conclusions from its systematic reviews. As with all food pattern modeling for the *Dietary Guidelines*, the results of the Committee's food pattern modeling tests were interpreted in light of two key assumptions. First, the modeling tests were based on nutrient profiles of nutrient-dense foods in the U.S. food supply and U.S. population-based dietary data. Population-based patterns articulate the evidence on the relationships between diet and health in ways that might be adopted by the U.S. public as a whole. Second, modeling tests assumed population-wide compliance with all food intake recommendations. As with other types of modeling, the food pattern modeling is hypothetical and does not predict the behaviors of individuals.

Each of these approaches had its own rigorous, protocol-driven methodology, and each had a unique, complementary role in examining the science. Additional detailed information is available at **DietaryGuidelines.gov** and **NESR.usda.gov**.

TRANSPARENT PROTOCOLS FIRST, THEN REVIEW

To answer each scientific question, the Committee first created a protocol that described how the Committee would apply one of the three approaches to examine the evidence related to that specific question. The Committee created each protocol before examining any evidence, and, for the first time, the protocols were posted online for the public as they were being developed. This enabled the public to understand how a specific scientific question would be answered and to have the opportunity to submit public comments before the Committee completed the protocols and conducted its reviews of the scientific evidence. Detailed information on the Committee's review is documented in its scientific report, which is available on **DietaryGuidelines.gov**.

Health Status of Participants in Studies Included in Nutrition Evidence Systematic Reviews

To ensure that the *Dietary Guidelines* promotes the health of and reduce risk of disease among all Americans, the evidence base that informs the *Dietary Guidelines* must comprise studies conducted with people who are representative of the general public and must examine diet through a health promotion and disease prevention lens.

As outlined in the Committee's systematic review protocols, the Committee's reviews included studies with participants who were healthy and/or who were at risk of a chronic disease, including participants with obesity, as well as studies that enrolled *some* participants with a disease. Because the *Dietary Guidelines* is not intended to be a clinical guideline for treating chronic diseases, the Committee excluded studies that enrolled *only* patients with a disease with the intention to treat those individuals.

In general, the majority of the reviews conducted to inform the *Dietary Guidelines* included trials that exclusively enrolled participants with overweight or obesity, or who were at high risk of cardiovascular disease or type 2 diabetes, and observational studies that enrolled participants from a wide range of health and weight status, including those with healthy weight, overweight, or obesity. The reviews included few studies that enrolled only healthy participants.

Thus, the *Dietary Guidelines* are applicable to the overall U.S. population, including healthy individuals and people at risk of diet-related chronic conditions and diseases, such as cardiovascular disease, type 2 diabetes, and obesity. In addition, people living with a diet-related chronic illness can benefit from a healthy dietary pattern. The *Dietary Guidelines* can serve as a reference for Federal, medical, voluntary, and patient care organizations as they develop nutrition guidance tailored for people living with a specific medical condition. Health professionals can adapt the *Dietary Guidelines* to meet the specific needs of their patients with chronic diseases, as part of a multifaceted treatment plan.

CONCLUSION STATEMENTS FOR THE SCIENTIFIC REVIEWS CONDUCTED

For all topics and questions, regardless of the approach used to identify and evaluate the scientific evidence, the Committee developed conclusion statements. Each conclusion statement provided a succinct answer to the specific question posed. The Committee took the strengths and limitations of the evidence base into consideration when formulating conclusion statements.

For questions answered using NESR systematic reviews, the conclusion statements included a grade to indicate the strength of the evidence supporting the conclusion statement. The grades were Strong, Moderate, Limited, or Grade Not Assignable.

Grading the strength of the evidence applied only to questions answered using NESR systematic reviews; it did not apply to questions answered using data analysis or food pattern modeling. Therefore, data analysis and food pattern modeling conclusion statements were not graded.

As it completed its work, the Committee looked across all of the conclusion statements to develop overarching advice for USDA and HHS to consider as the Departments developed the next edition of the *Dietary Guidelines*.

Using these three approaches, the Committee worked collaboratively for 16 months and deliberated on the scientific reviews in six meetings, all of which were open to the public. Two of the six meetings included an opportunity for the public to provide oral comments to the Committee. An ongoing period for written public comments to the Committee spanned 15 months of its work. And, for the first time, a final public meeting was included for the Committee to discuss its draft scientific report 1 month before the final report was posted for public comment.

In addition to documenting its rigorous review of the evidence to answer the scientific questions from USDA and HHS and providing advice for the Departments' development of the next *Dietary Guidelines* edition, the Committee provided recommendations for future research. These research recommendations reflected an acknowledgment that science in nutrition, diet, and health associations continues to evolve, and that new findings build on and enhance existing evidence.

Upon submitting its final scientific report to the USDA and HHS Secretaries, the Committee disbanded. The Departments then posted the scientific report and asked the public for comments. The Departments received written comments on the report over a 30-day period and also held an online meeting to hear oral comments.

Stage 3: Develop the *Dietary Guidelines*

Each edition of the *Dietary Guidelines* builds on the preceding edition, with the scientific justification for revisions informed by the Committee's scientific report and consideration of public and Federal agency comments. As with previous editions, development of the *2020-2025 Dietary Guidelines* involved a step-by-step process of writing, review, and revision conducted by a writing team of Federal staff from USDA and HHS.

The writing team included Federal nutrition scientists with expertise in the *Dietary Guidelines* and related research and programs as well as specialists with expertise in communicating nutrition information.

Key tenets of writing the *Dietary Guidelines* are that it must:

- Represent the totality of the evidence examined
- Address the needs of Federal programs
- Reduce unintended consequences
- Follow best practices for developing guidelines
- Use plain language

The draft *Dietary Guidelines* went through internal and external review. Ultimately, the document was reviewed by all Agencies with nutrition policies and programs across USDA and HHS, such as USDA's Food and Nutrition Service and its Food Safety and Inspection Service, and HHS' National Institutes of Health, Food and Drug Administration, and Centers for Disease Control and Prevention. The draft *Dietary Guidelines* also went through an external expert peer review to ensure that it accurately reflected the body of evidence documented in the Committee's scientific report.

This process culminated with approval by the Secretaries of USDA and HHS. After approval by the Secretaries, the Departments released the *Dietary Guidelines* to Federal agencies and the public for implementation across programs and through educational activities.

Stage 4: Implement the *Dietary Guidelines*

The U.S. Government uses the *Dietary Guidelines* as the basis of its food assistance and meal programs, nutrition education efforts, and decisions about national health objectives. For example, the National School Lunch Program and the Older Americans Act Nutrition Program incorporate the *Dietary Guidelines* in menu planning; the Special Supplemental Nutrition Program for Women, Infants, and Children applies the *Dietary Guidelines* in its program and educational materials; and the Healthy People objectives for the Nation include objectives based on the *Dietary Guidelines*.

The *Dietary Guidelines* also provides a critical structure for State and local public health promotion and disease prevention initiatives. In addition, it provides foundational, evidence-based nutrition guidance for use by individuals and those who serve them in public and private settings, including health professionals, public health and social service agencies, health care and educational institutions, researchers, agricultural producers, food and beverage manufacturers, and more.

Implementation of the *Dietary Guidelines* Through MyPlate

Using MyPlate as a Guide To Support Healthy Dietary Patterns

The *Dietary Guidelines for Americans* is developed and written for a professional audience. Therefore, its translation into actionable consumer messages and resources is crucial to help individuals, families, and communities achieve healthy dietary patterns.

MyPlate is one example of consumer translation. Created to be used in various settings and adaptable to meeting personal preferences, cultural foodways, traditions, and budget needs, MyPlate is used by professionals across sectors to help people become more aware of and informed about making healthy food and beverage choices over time. More information is available at **MyPlate.gov**.

Following a healthy dietary pattern from birth through older adulthood can have a profound impact on a person's lifelong health. The *Dietary Guidelines* provides the framework for following such a pattern. However, broad and multisector collaboration is needed to help people achieve that goal. Action on many fronts is needed to ensure that healthy dietary choices at home, school, work, and play are the affordable, accessible norm. Everyone has a role to play in helping all Americans shift to a healthy dietary pattern and achieve better health.

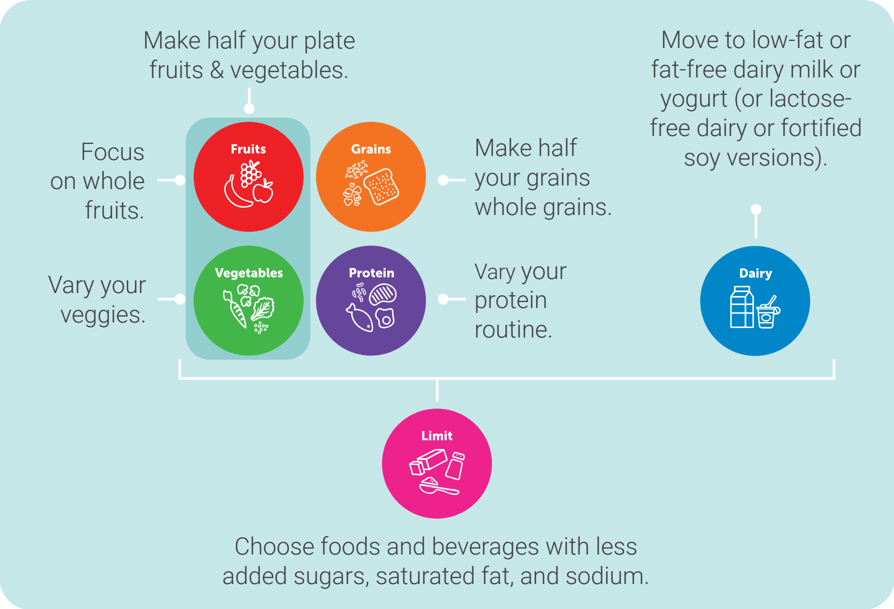
Try the MyPlate Plan

A healthy eating routine is important at every stage of life and can have positive effects that add up over time. It's important to eat a variety of fruits, vegetables, grains, dairy or fortified soy alternatives, and protein foods. When deciding what to eat or drink, choose options that are full of nutrients. Make every bite count.

Think about how the following recommendations can come together over the course of your day or week to help you create a healthy eating routine:

To learn what the right amounts are for you, try the personalized **MyPlate Plan**.[2]

Based on decades of solid science, MyPlate advice can help you day to day and over time.



Make half your plate fruits & vegetables.

Focus on whole fruits.

Vary your veggies.

Make half your grains whole grains.

Vary your protein routine.

Move to low-fat or fat-free dairy milk or yogurt (or lactose-free dairy or fortified soy versions).

Choose foods and beverages with less added sugars, saturated fat, and sodium.

The benefits of healthy eating add up over time, bite by bite. Small changes matter. **Start Simple with MyPlate**.

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[2] Available at: **MyPlate.gov/myplate-plan**

A Roadmap to the *Dietary Guidelines for Americans, 2020-2025*

Reflecting the accumulating body of evidence about the relationships between diet and health outcomes, the *2020-2025 Dietary Guidelines* presents its recommendations with a primary emphasis on encouraging the consumption of a healthy overall dietary pattern at every stage of life, from birth through older adulthood. This edition of the *Dietary Guidelines* consists of an Executive Summary, this Introduction, six chapters, and three appendixes.

- **Chapter 1: Nutrition and Health Across the Lifespan: The Guidelines and Key Recommendations** discusses the health benefits of lifelong healthy dietary choices and explains the four Guidelines and supporting Key Recommendations. This chapter is the basis for all the succeeding chapters. Chapters 2 through 6 should be read in tandem with Chapter 1.

- **Chapter 2: Infants and Toddlers** is the first of five chapters that focus on healthy dietary patterns for a specific life stage. This edition of the *Dietary Guidelines* is the first since the 1985 edition to provide guidance for infants and toddlers (birth through age 23 months). The chapter provides specific key recommendations for this age group, along with guidance on how to put these recommendations into action. The chapter closes with a Healthy Dietary Pattern during the second year of life and a look toward the next life stage—Children and Adolescents.

- **Chapter 3: Children and Adolescents** first sets the stage by describing nutrition issues specific to children and adolescents ages 2 through 18. It then presents the recommended Healthy Dietary Patterns for this age group, explains how current intakes compare to recommendations, and discusses special dietary guidance considerations for this life stage. The chapter concludes with a discussion of ways to support healthy dietary patterns among children and adolescents and a look toward the next life stage—Adults.

- **Chapter 4: Adults** opens with a discussion of selected nutrition issues that characterize the adult life stage (ages 19 through 59). It then presents the recommended Healthy Dietary Patterns for this age group, explains how current intakes compare to recommendations, and discusses special dietary guidance considerations for adults. The chapter concludes with suggestions for how to support healthy dietary patterns among adults and a look toward two important adult life stages—Women Who Are Pregnant or Lactating and Older Adults.

- **Chapter 5: Women Who Are Pregnant or Lactating** opens with a discussion of selected nutrition issues important to this stage of adult life. It then presents the recommended Healthy Dietary Patterns for this life stage, explains how current intakes compare to recommendations, and discusses special dietary guidance considerations for women who are pregnant or lactating. The chapter concludes with suggestions for how to support healthy dietary patterns among this population group.

- **Chapter 6: Older Adults** opens with a discussion of selected nutrition issues that are important for older adults, ages 60 and older. It then presents the recommended Healthy Dietary Patterns for this life stage, explains how current intakes compare to recommendations, and discusses special dietary guidance considerations for this age group. The chapter concludes with suggestions for how to support healthy dietary patterns among older adults.

- **Appendixes** include a table summarizing nutritional goals for age-sex groups, estimated calorie needs for all ages and at three physical activity levels, and the USDA Dietary Patterns.

CHAPTER 1

Nutrition and Health Across the Lifespan: The Guidelines and Key Recommendations

The Guidelines

Make every bite count with the *Dietary Guidelines for Americans*. Here's how:

1 Follow a healthy dietary pattern at every life stage.

2 Customize and enjoy nutrient-dense food and beverage choices to reflect personal preferences, cultural traditions, and budgetary considerations.

DGA
DietaryGuidelines.gov

3 Focus on meeting food group needs with nutrient-dense foods and beverages, and stay within calorie limits.

4 Limit foods and beverages higher in added sugars, saturated fat, and sodium, and limit alcoholic beverages.

Key Recommendations

Guideline 1

Follow a healthy dietary pattern at every life stage.

At every life stage—infancy, toddlerhood, childhood, adolescence, adulthood, pregnancy, lactation, and older adulthood—it is never too early or too late to eat healthfully.

- **For about the first 6 months of life**, exclusively feed infants human milk. Continue to feed infants human milk through at least the first year of life, and longer if desired. Feed infants iron-fortified infant formula during the first year of life when human milk is unavailable. Provide infants with supplemental vitamin D beginning soon after birth.
- **At about 6 months**, introduce infants to nutrient-dense complementary foods. Introduce infants to potentially allergenic foods along with other complementary foods. Encourage infants and toddlers to consume a variety of foods from all food groups. Include foods rich in iron and zinc, particularly for infants fed human milk.
- **From 12 months through older adulthood**, follow a healthy dietary pattern across the lifespan to meet nutrient needs, help achieve a healthy body weight, and reduce the risk of chronic disease.

Guideline 2

Customize and enjoy nutrient-dense food and beverage choices to reflect personal preferences, cultural traditions, and budgetary considerations.

A healthy dietary pattern can benefit all individuals regardless of age, race, or ethnicity, or current health status. The *Dietary Guidelines* provides a framework intended to be customized to individual needs and preferences, as well as the foodways of the diverse cultures in the United States.

Guideline 3

Focus on meeting food group needs with nutrient-dense foods and beverages, and stay within calorie limits.

An underlying premise of the *Dietary Guidelines* is that nutritional needs should be met primarily from foods and beverages—specifically, nutrient-dense foods and beverages. Nutrient-dense foods provide vitamins, minerals, and other health-promoting components and have no or little added sugars, saturated fat, and sodium. A healthy dietary pattern consists of nutrient-dense forms of foods and beverages across all food groups, in recommended amounts, and within calorie limits.

The core elements that make up a healthy dietary pattern include:

- Vegetables of all types—dark green; red and orange; beans, peas, and lentils; starchy; and other vegetables
- Fruits, especially whole fruit
- Grains, at least half of which are whole grain
- Dairy, including fat-free or low-fat milk, yogurt, and cheese, and/or lactose-free versions and fortified soy beverages and yogurt as alternatives
- Protein foods, including lean meats, poultry, and eggs; seafood; beans, peas, and lentils; and nuts, seeds, and soy products
- Oils, including vegetable oils and oils in food, such as seafood and nuts

Guideline 4

Limit foods and beverages higher in added sugars, saturated fat, and sodium, and limit alcoholic beverages.

At every life stage, meeting food group recommendations—even with nutrient-dense choices—requires most of a person's daily calorie needs and sodium limits. A healthy dietary pattern doesn't have much room for extra added sugars, saturated fat, or sodium—or for alcoholic beverages. A small amount of added sugars, saturated fat, or sodium can be added to nutrient-dense foods and beverages to help meet food group recommendations, but foods and beverages high in these components should be limited. **Limits are:**

- **Added sugars**—Less than 10 percent of calories per day starting at age 2. Avoid foods and beverages with added sugars for those younger than age 2.
- **Saturated fat**—Less than 10 percent of calories per day starting at age 2.
- **Sodium**—Less than 2,300 milligrams per day—and even less for children younger than age 14.
- **Alcoholic beverages**—Adults of legal drinking age can choose not to drink or to drink in moderation by limiting intake to 2 drinks or less in a day for men and 1 drink or less in a day for women, when alcohol is consumed. Drinking less is better for health than drinking more. There are some adults who should not drink alcohol, such as women who are pregnant.

Guideline 1

Follow a Healthy Dietary Pattern at Every Life Stage

A fundamental premise of the *Dietary Guidelines* is that almost everyone, no matter an individual's age, race, or ethnicity, or health status, can benefit from shifting food and beverage choices to better support healthy dietary patterns.

Healthy eating starts at birth with the exclusive consumption of human milk, if possible, for about the first 6 months. If human milk is unavailable, infants should be fed an iron-fortified commercial infant formula (i.e., labeled "with iron") regulated by the U.S. Food and Drug Administration (FDA), which are based on standards that ensure nutrient content and safety. Healthy eating continues with the introduction of complementary foods and beverages at about 6 months of age. By 12 months, infants should maintain their healthy eating as they transition to developmentally appropriate foods and beverages. Healthy eating continues in each life stage thereafter. Even though nutrient needs vary across life stages, the foods and beverages that individuals should eat over the lifespan are remarkably consistent.

This chapter provides foundational guidance about maintaining a healthy dietary pattern across each life stage—infancy, toddlerhood, childhood, adolescence, adulthood, pregnancy, lactation, and older adulthood. Because the nutritional needs and transition of infants and toddlers are unique, ***Chapter 2*** provides a focused discussion on this age group. ***Chapters 3***, ***4***, ***5***, and **6** then provide tailored nutrition information specific to children and adolescents, adults, women who are pregnant or lactating, and older adults, respectively.

What Is a Dietary Pattern?

Over the course of any given day, week, or year, individuals consume foods and beverages[1] in combination—a dietary pattern. A dietary pattern represents the totality of what individuals habitually eat and drink, and the parts of the pattern act synergistically to affect health. As a result, the dietary pattern may better predict overall health status and disease risk than individual foods or nutrients.

A healthy dietary pattern consists of nutrient-dense forms of foods and beverages across all food groups, in recommended amounts, and within calorie limits. Achieving a healthy dietary pattern at each life stage not only supports health at that point in time, but also supports health in the next life stage and possibly for future generations. If healthy dietary patterns can be established early in life and sustained thereafter, the impact on health could be significant. Establishing and maintaining a healthy dietary pattern can help minimize diet-related chronic disease risk. Conversely, consuming foods and beverages that are not nutrient-dense may lead to disease expression in later years. High intakes of such foods (i.e., an unhealthy dietary pattern) throughout the lifespan can increase the risk of developing chronic diseases.

The good news is that at any stage of life, individuals can make efforts to adopt a healthy dietary pattern and improve their health. The Healthy U.S.-Style Dietary Pattern, USDA's primary Dietary Pattern, provides a framework for healthy eating that all Americans can follow. It is based on the types and proportions of foods Americans of all ages, genders, races, and ethnicities typically consume, but in nutrient-dense forms and appropriate amounts.

The Healthy U.S.-Style Dietary Pattern is carried forward from the *2015-2020 Dietary Guidelines for Americans*. The 2,000-calorie level of the pattern is shown in **Table 1-1**. The Healthy Mediterranean-Style Dietary Pattern and the Healthy Vegetarian Dietary Pattern—also carried forward from the *2015-2020 Dietary Guidelines for Americans*—are variations of the Healthy U.S.-Style Dietary Pattern that have the same core elements. The USDA Dietary Patterns are described in ***Appendix 3. USDA Dietary Patterns*** and are meant to be tailored to meet cultural and personal preferences and used as guides to plan and serve meals for individuals, households, and in a variety of institutions and other settings. The Dietary Approaches to Stop Hypertension (DASH) dietary pattern is an example of a healthy dietary pattern and has many of the same characteristics as the Healthy U.S.-Style Dietary Pattern. Additional details on DASH are available at **nhlbi.nih.gov/health-topics/dash-eating-plan**.

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[1] If not specified explicitly, references to "foods" refer to "foods and beverages."

Table 1-1

Healthy U.S.-Style Dietary Pattern at the 2,000-Calorie Level, With Daily or Weekly Amounts From Food Groups, Subgroups, and Components

FOOD GROUP OR SUBGROUP[a]	**Daily Amount[b] of Food From Each Group** (Vegetable and protein foods subgroup amounts are per week.)
Vegetables (cup eq/day)	**2 ½**
	Vegetable Subgroups in Weekly Amounts
Dark-Green Vegetables (cup eq/wk)	1 ½
Red and Orange Vegetables (cup eq/wk)	5 ½
Beans, Peas, Lentils (cup eq/wk)	1 ½
Starchy Vegetables (cup eq/wk)	5
Other Vegetables (cup eq/wk)	4
Fruits (cup eq/day)	**2**
Grains (ounce eq/day)	**6**
Whole Grains (ounce eq/day)	≥ 3
Refined Grains (ounce eq/day)	< 3
Dairy (cup eq/day)	**3**
Protein Foods (ounce eq/day)	**5 ½**
	Protein Foods Subgroups in Weekly Amounts
Meats, Poultry, Eggs (ounce eq/wk)	26
Seafood (ounce eq/wk)	8
Nuts, Seeds, Soy Products (ounce eq/wk)	5
Oils (grams/day)	**27**
Limit on Calories for Other Uses (kcal/day)[c]	**240**
Limit on Calories for Other Uses (%/day)	12%

[a] Definitions for each food group and subgroup are provided throughout the chapter and are compiled in ***Appendix 3***.

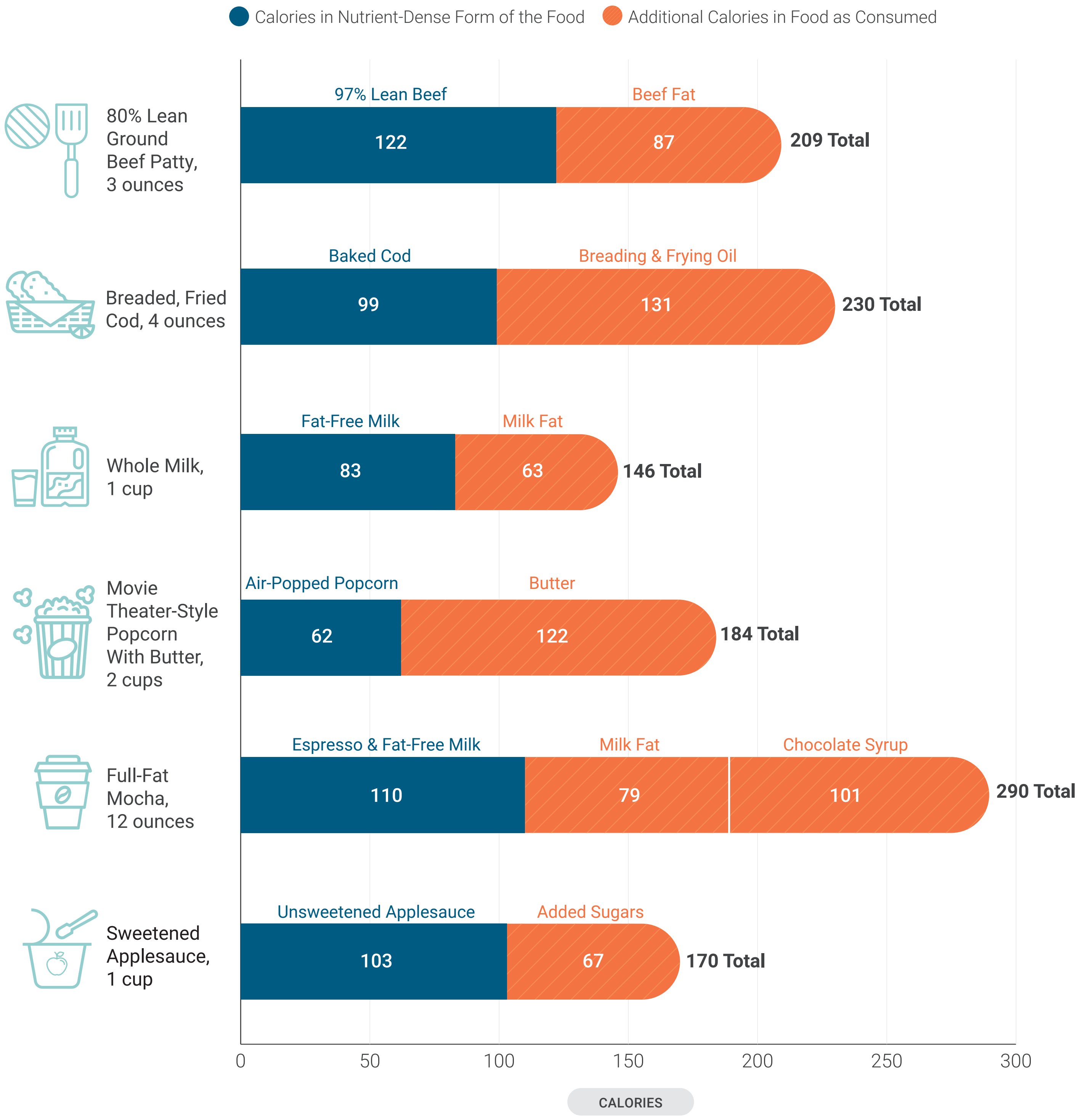
[b] Food group amounts shown in cup or ounce equivalents (eq). Oils are shown in grams. Quantity equivalents for each food group are defined in ***Appendix 3***. Amounts will vary for those who need <2,000 or >2,000 calories per day.

[c] Foods are assumed to be in nutrient-dense forms, lean or low-fat and prepared with minimal added sugars, refined starches, saturated fat, or sodium. If all food choices to meet food group recommendations are in nutrient-dense forms, a small number of calories remain within the overall limit of the pattern (i.e., limit on calories for other uses). The amount of calories depends on the total calorie level of the pattern and the amounts of food from each food group required to meet nutritional goals. Calories up to the specified limit can be used for added sugars, saturated fat, and/or alcohol, or to eat more than the recommended amount of food in a food group.

NOTE: The total dietary pattern should not exceed *Dietary Guidelines* limits for added sugars, saturated fat, and alcohol; be within the Acceptable Macronutrient Distribution Ranges for protein, carbohydrate, and total fats; and stay within calorie limits. Values are rounded. See ***Appendix 3*** for all calorie levels of the pattern.

Figure 1-1

Examples of Calories in Food Choices That Are Not Nutrient Dense and Calories in Nutrient-Dense Forms of These Foods

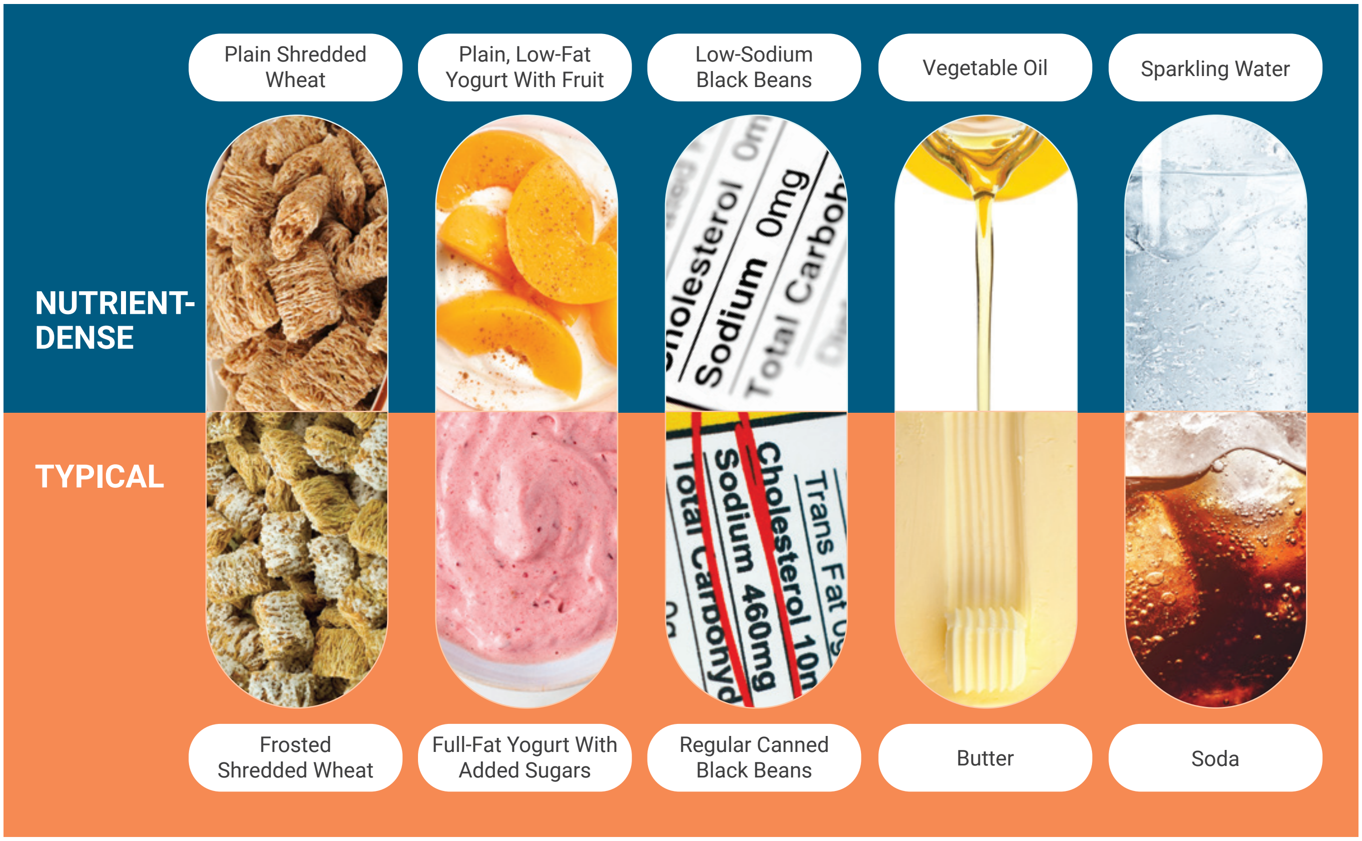


Data Source: U.S. Department of Agriculture, Agricultural Research Service. FoodData Central, 2019. **fdc.nal.usda.gov**.

Figure 1-2

Making Nutrient-Dense Choices: One Food or Beverage At a Time

Every food and beverage choice is an opportunity to move toward a healthy dietary pattern. Small changes in single choices add up and can make a big difference. These are a few examples of realistic, small changes to nutrient-dense choices that can help people adopt healthy dietary patterns.


Plain Shredded Wheat
Plain, Low-Fat Yogurt With Fruit
Low-Sodium Black Beans
Vegetable Oil
Sparkling Water
NUTRIENT-DENSE
TYPICAL
Frosted Shredded Wheat
Full-Fat Yogurt With Added Sugars
Regular Canned Black Beans
Butter
Soda

The Health Benefits of a Healthy Dietary Pattern

Science is the foundation of the *Dietary Guidelines* recommendations on what Americans should eat and drink to promote health, reduce risk of chronic disease, and meet nutrient needs. The science shows that consuming a healthy dietary pattern, meeting food group and nutrient needs with nutrient-dense foods and beverages, and limiting intake of foods and beverages that are not nutrient-dense is related to many health benefits. Science also supports the idea that every life stage provides an opportunity to make food choices that promote health and well-being, achieve and maintain appropriate weight status, and reduce risk of diet-related chronic disease.

The science supporting the *Dietary Guidelines* is extensively documented in the *Scientific Report of the 2020 Dietary Guidelines Advisory Committee*, which describes the state of the science on key topics related to diet and health. Outcomes with Strong or Moderate evidence are provided in **Figure 1-3**. The report is available at **DietaryGuidelines.gov**.

Evidence on the association between dietary patterns and reduced risk of diet-related chronic diseases has expanded in recent years and supports the use of dietary patterns as a foundation for the recommendations in the *Dietary Guidelines for Americans, 2020-2025*. Consistent evidence demonstrates that a healthy dietary pattern is associated with beneficial outcomes for all-cause mortality, cardiovascular disease, overweight and obesity, type 2 diabetes, bone health, and certain types of cancer (breast and colorectal).

Common characteristics of dietary patterns associated with positive health outcomes include relatively higher intake of vegetables, fruits, legumes, whole grains, low- or non-fat dairy, lean meats and poultry, seafood, nuts, and unsaturated vegetable oils, and relatively lower consumption of red and processed meats, sugar-sweetened foods and beverages, and refined grains. The evidence examined showed broad representation across a number of populations and demographic groups. This suggests a consistent association no matter the region or cultural context in which a healthy dietary pattern is consumed. In addition, dietary patterns characterized by higher intake of red and processed meats, sugar-sweetened foods and beverages, and refined grains are, in and of themselves, associated with detrimental health outcomes. These findings are consistent with—and build on—the evidence base that informed the *2015-2020 Dietary Guidelines*.

A Healthy Dietary Pattern Supports Appropriate Calorie Levels

The total number of calories a person needs each day varies depending on a number of factors, namely the person's age, sex, height, weight, level of physical activity, and pregnancy or lactation status. Due to reductions in basal metabolic rate that occur with aging, calorie needs generally decrease for adults as they age. In addition, a need to lose, maintain, or gain weight affects how many calories should be consumed. Estimated amounts of calories needed based on age, sex, and level of physical activity are provided in ***Appendix 2. Estimated Calorie Needs***, and estimated calorie needs relevant for different ages are provided in each life stage chapter. These estimates are based on the Estimated Energy Requirement (EER) equations established by the National Academies of Sciences, Engineering, and Medicine (National Academies) using reference heights (average) and reference weights (healthy) for each age-sex group. These amounts are estimates. **The best way to evaluate calorie intake, in comparison to calorie needs, is by measuring body weight status.**

Rather than focus on weight status at any one point in life, **the *Dietary Guidelines* supports healthy weight trajectories at each stage of life—appropriate weight gain during pregnancy and postpartum weight loss, healthy growth and development from infancy through adolescence, weight stability during mid-life, and healthy body composition late in life. Meeting the *Dietary Guidelines* recommendations within calorie needs can help prevent excess weight gain at every life stage and support overall good health.**

Figure 1-3

The Science Underlying the *Dietary Guidelines* Demonstrates That Healthy Eating Across the Lifespan Can Promote Health and Reduce Risk of Chronic Disease

Birth Through 23 Months

- Lower risk of overweight and obesity
- Lower risk of type 1 diabetes
- Adequate iron status and lower risk of iron deficiency
- Lower risk of peanut allergy
- Lower risk of asthma

Children and Adolescents

- Lower adiposity
- Lower total and low-density lipoprotein (LDL) cholesterol

Women Who Are Pregnant or Lactating

- Favorable cognitive development in the child
- Favorable folate status in women during pregnancy and lactation

Adults, Including Older Adults

- Lower risk of all-cause mortality
- Lower risk of cardiovascular disease
- Lower risk of cardiovascular disease mortality
- Lower total and LDL cholesterol
- Lower blood pressure
- Lower risk of obesity
- Lower body mass index, waist circumference, and body fat
- Lower risk of type 2 diabetes
- Lower risk of cancers of the breast, colon, and rectum
- Favorable bone health, including lower risk of hip fracture

NOTE: The 2020 Dietary Guidelines Advisory Committee examined the evidence on diet and health across the lifespan. Evidence is not available for all combinations of exposures and outcomes for the population subgroups presented in this figure. The Committee rated the evidence on diet and health as Strong, Moderate, Limited, or Grade Not Assignable. Only outcomes with Strong or Moderate evidence are included in this table. See the **Committee's Report** for specific graded conclusion statements.

Key Dietary Principles

To help people meet the Guidelines and Key Recommendations, the following are important principles when making decisions about nutrient-dense food and beverage choices to achieve a healthy dietary pattern.

MEET NUTRITIONAL NEEDS PRIMARILY FROM FOODS AND BEVERAGES

The *Dietary Guidelines* are designed to meet the Recommended Dietary Allowances and Adequate Intakes for essential nutrients, as well as Acceptable Macronutrient Distribution Ranges, all set by the National Academies. An underlying premise of the *Dietary Guidelines* is that nutritional needs should be met primarily from foods and beverages—specifically, nutrient-dense foods and beverages. In some cases, when meeting nutrient needs is not otherwise possible, fortified foods and nutrient-containing dietary supplements are useful. It is important to note that the nutrient density and healthfulness of what people eat and drink often is determined ultimately by how a food item, dish, or meal is prepared, at home and away from home or produced by a manufacturer. Based on the U.S. food supply and marketplace, the examples of healthy dietary patterns in this edition are achievable through thoughtful, informed choices one decision, one meal, one day at a time—and consistently over time.

CHOOSE A VARIETY OF OPTIONS FROM EACH FOOD GROUP

Enjoy different foods and beverages within each food group. This can help meet nutrient needs—and also allows for flexibility so that the *Dietary Guidelines* can be tailored to meet cultural and personal preferences. All forms of foods, including fresh, canned, dried, frozen, and 100% juices, in nutrient-dense forms, can be included in healthy dietary patterns.

PAY ATTENTION TO PORTION SIZE

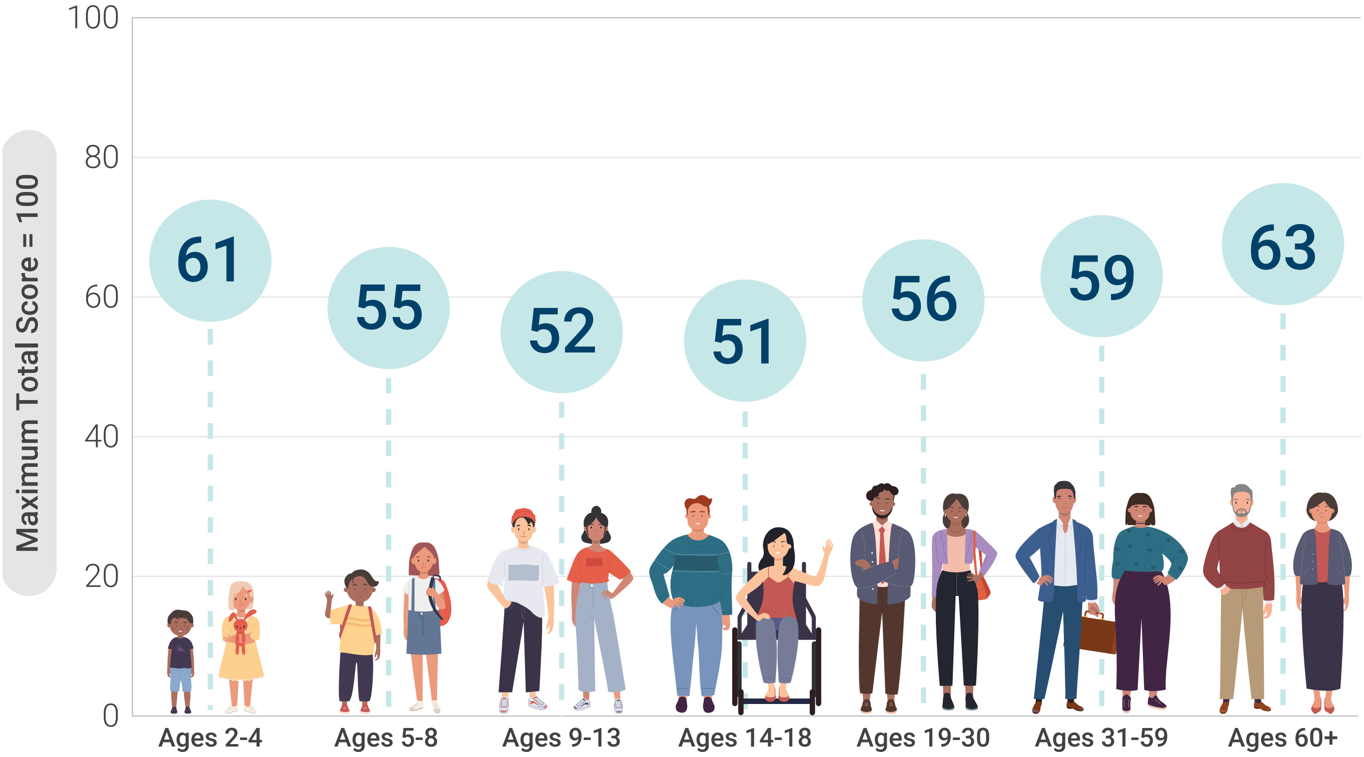
Portion size is a term often used to describe the amount of a food or beverage served or consumed in one eating occasion. It is important to pay attention to portion size when making food and beverage choices, particularly for foods and beverages that are not nutrient-dense. A concept that can help people choose appropriate portions is ***serving size***. This term is included on the Nutrition Facts label and refers to the amount of a food or beverage that is customarily consumed—it is not a recommendation of how much to eat or drink. Consuming less than the stated serving size results in consuming fewer calories and other nutrients or food components. Some products may have multiple servings per package.

Most Americans Do Not Follow a Healthy Dietary Pattern

The typical dietary patterns currently consumed by many in the United States do not align with the *Dietary Guidelines* (**Figure 1-4**). The Healthy Eating Index (HEI) is a measure of diet quality that can be used to assess compliance with the *Dietary Guidelines*. For Americans ages 2 and older, HEI-2015 scores indicate that intakes are not consistent with recommendations for a healthy dietary pattern. Average diet quality has slightly improved in the past 10 years, but the average score of 59 (on a scale from 0 to 100) indicates that people have much room for improvement. Differences in overall HEI scores are seen across age, sex, race-ethnic, and income subgroups and by pregnancy and lactation status, though poor diet quality is observed across all groups. With each step closer to a diet that aligns with the core elements of a healthy dietary pattern, HEI scores will increase and risk for chronic disease will decrease.

Figure 1-4

Adherence of the U.S. Population to the *Dietary Guidelines* Across Life Stages, as Measured by Average Total Healthy Eating Index-2015 Scores



NOTE: HEI-2015 total scores are out of 100 possible points. A score of 100 indicates that recommendations on average were met or exceeded. A higher total score indicates a higher quality diet.

Data Source: Analysis of What We Eat in America, NHANES 2015-2016, ages 2 and older, day 1 dietary intake data, weighted.

In addition, the high percentage of the population with overweight or obesity suggests that many people in the United States consume foods and beverages that contribute to a calorie imbalance, a situation more likely to occur with low physical activity. As shown in the ***Introduction*, Table I-1**, 74 percent of all adults and 40 percent of all children and youth in the United States have either overweight or obesity.

Even from the youngest ages, almost all Americans should shift to healthier food and beverage choices and consume smaller portions to achieve a healthy dietary pattern within an appropriate number of calories. It is never too early or too late to improve intake and establish a healthy dietary pattern.

Guideline 2

Customize and Enjoy Food and Beverage Choices to Reflect Personal Preferences, Cultural Traditions, and Budgetary Considerations

Eating should be enjoyed, and a healthy dietary pattern can be enjoyable, from early life to older adulthood. The science reviewed to inform the *Dietary Guidelines* represents the diversity of Americans, including all ages and life stages, different racial and ethnic backgrounds, and a range of socioeconomic statuses. A healthy dietary pattern can benefit all individuals regardless of age, race or ethnicity, or current health status.

The *Dietary Guidelines* provides a framework intended to be customized to fit individual, household, and Federal program participants' preferences, as well as the foodways of the diverse cultures in the United States. The U.S. population is diverse in myriad ways. The *Dietary Guidelines* framework purposely provides recommendations by food groups and subgroups—not specific foods and beverages—to avoid being prescriptive. This framework approach ensures that people can "make it their own" by selecting healthy foods, beverages, meals, and snacks specific to their needs and preferences.

The food groups include a broad variety of nutrient-dense food and beverage choices. In every setting, across all cultures, and at any age or budget, there are foods and beverages that can fit within the *Dietary Guidelines* framework.

Start with Personal Preferences

Exposure to different types of food is important early in life to better develop a child's interest and willingness to eat and enjoy a variety of foods. Through each life stage that follows, a key starting point for establishing and maintaining a healthy dietary pattern is to ensure that individual and/or family preferences—in nutrient-dense forms—are built into day-to-day choices.

Incorporate Cultural Traditions

Cultural background can have significant influence on food and beverage choices. Customizing the *Dietary Guidelines* framework to reflect specific cultures and traditions is an important strategy to help communities across the country eat and enjoy a healthy dietary pattern. Nutrient-dense culturally relevant foods and beverages are part of all of the food groups. Spices and herbs can help flavor foods when reducing added sugars, saturated fat, and sodium, and they also can add to the enjoyment of nutrient-dense foods, dishes, and meals that reflect specific cultures. Relying on the expertise of professionals in nutrition and in specific cultural foodways can help people prepare foods healthfully while retaining heritage.

Consider Budget

Despite a common perception that eating healthfully is expensive, a healthy dietary pattern can be affordable and fit within budgetary constraints. There are a range of strategies that can be used to help individuals and families follow a healthy dietary pattern including advanced planning; considering regional and seasonal food availability; and incorporating a variety of fresh, frozen, dried, and canned options. **The USDA Food Plans—Thrifty, Low-Cost, Moderate-Cost, and Liberal-Cost food plans**—each represent a nutritious diet at a different cost level. These plans are scheduled to be revised, with an updated Thrifty Food Plan published by the end of 2022 to reflect this edition of the *Dietary Guidelines* and updated food availability and food cost data.

Figure 1-5

Customizing the *Dietary Guidelines* Framework

The *Dietary Guidelines* approach of providing a framework–not prescriptive details–ensures that its recommendations can "meet people where they are," from personal preferences to cultural foodways, and including budgetary considerations. The examples below are a sample of the range of options in each food group—to be eaten in nutrient-dense forms. Additional examples are listed under **Table A3-2** in ***Appendix 3***.

Vegetables

Vegetables

- **Dark-Green Vegetables:** All fresh, frozen, and canned dark-green leafy vegetables and broccoli, cooked or raw: for example, amaranth leaves, bok choy, broccoli, chamnamul, chard, collards, kale, mustard greens, poke greens, romaine lettuce, spinach, taro leaves, turnip greens, and watercress.
- **Red and Orange Vegetables:** All fresh, frozen, and canned red and orange vegetables or juice, cooked or raw: for example, calabaza, carrots, red or orange bell peppers, sweet potatoes, tomatoes, 100% tomato juice, and winter squash.
- **Beans, Peas, Lentils:** All cooked from dry or canned beans, peas, chickpeas, and lentils: for example, black beans, black-eyed peas, bayo beans, chickpeas (garbanzo beans), edamame, kidney beans, lentils, lima beans, mung beans, pigeon peas, pinto beans, and split peas. Does not include green beans or green peas.
- **Starchy Vegetables:** All fresh, frozen, and canned starchy vegetables: for example, breadfruit, burdock root, cassava, corn, jicama, lotus root, lima beans, plantains, white potatoes, salsify, taro root (dasheen or yautia), water chestnuts, yam, and yucca.
- **Other Vegetables:** All other fresh, frozen, and canned vegetables, cooked or raw: for example, asparagus, avocado, bamboo shoots, beets, bitter melon, Brussels sprouts, cabbage (green, red, napa, savoy), cactus pads (nopales), cauliflower, celery, chayote (mirliton), cucumber, eggplant, green beans, kohlrabi, luffa, mushrooms, okra, onions, radish, rutabaga, seaweed, snow peas, summer squash, tomatillos, and turnips.

Fruits

Fruits

- All fresh, frozen, canned, and dried fruits and 100% fruit juices: for example, apples, Asian pears, bananas, berries (e.g., blackberries, blueberries, currants, huckleberries, kiwifruit, mulberries, raspberries, and strawberries); citrus fruit (e.g., calamondin, grapefruit, lemons, limes, oranges, and pomelos); cherries, dates, figs, grapes, guava, jackfruit, lychee, mangoes, melons (e.g., cantaloupe, casaba, honeydew, and watermelon); nectarines, papaya, peaches, pears, persimmons, pineapple, plums, pomegranates, raisins, rhubarb, sapote, and soursop.

Figure 1-5 **Customizing the *Dietary Guidelines* Framework (continued)**

Grains

Grains

- **Whole grains:** All whole-grain products and whole grains used as ingredients: for example, amaranth, barley (not pearled), brown rice, buckwheat, bulgur, millet, oats, popcorn, quinoa, dark rye, whole-grain cornmeal, whole-wheat bread, whole-wheat chapati, whole-grain cereals and crackers, and wild rice.
- **Refined grains:** All refined-grain products and refined grains used as ingredients: for example, white breads, refined-grain cereals and crackers, corn grits, cream of rice, cream of wheat, barley (pearled), masa, pasta, and white rice. Refined-grain choices should be enriched.

Dairy

Dairy and Fortified Soy Alternatives

- All fluid, dry, or evaporated milk, including lactose-free and lactose-reduced products and fortified soy beverages (soy milk), buttermilk, yogurt, kefir, frozen yogurt, dairy desserts, and cheeses. Most choices should be fat-free or low-fat. Cream, sour cream, and cream cheese are not included due to their low calcium content.

Protein

Protein Foods

- **Meats, Poultry, Eggs:** Meats include beef, goat, lamb, pork, and game meat (e.g., bison, moose, elk, deer). Poultry includes chicken, Cornish hens, duck, game birds (e.g., ostrich, pheasant, and quail), goose, and turkey. Organ meats include chitterlings, giblets, gizzard, liver, sweetbreads, tongue, and tripe. Eggs include chicken eggs and other birds' eggs. Meats and poultry should be lean or low-fat.
- **Seafood:** Seafood examples that are lower in methylmercury include: anchovy, black sea bass, catfish, clams, cod, crab, crawfish, flounder, haddock, hake, herring, lobster, mullet, oyster, perch, pollock, salmon, sardine, scallop, shrimp, sole, squid, tilapia, freshwater trout, light tuna, and whiting.
- **Nuts, Seeds, Soy Products:** Nuts and seeds include all nuts (tree nuts and peanuts), nut butters, seeds (e.g., chia, flax, pumpkin, sesame, and sunflower), and seed butters (e.g., sesame or tahini and sunflower). Soy includes tofu, tempeh, and products made from soy flour, soy protein isolate, and soy concentrate. Nuts should be unsalted.

Guideline 3

Focus on Meeting Food Group Needs With Nutrient-Dense Foods and Beverages, and Stay Within Calorie Limits

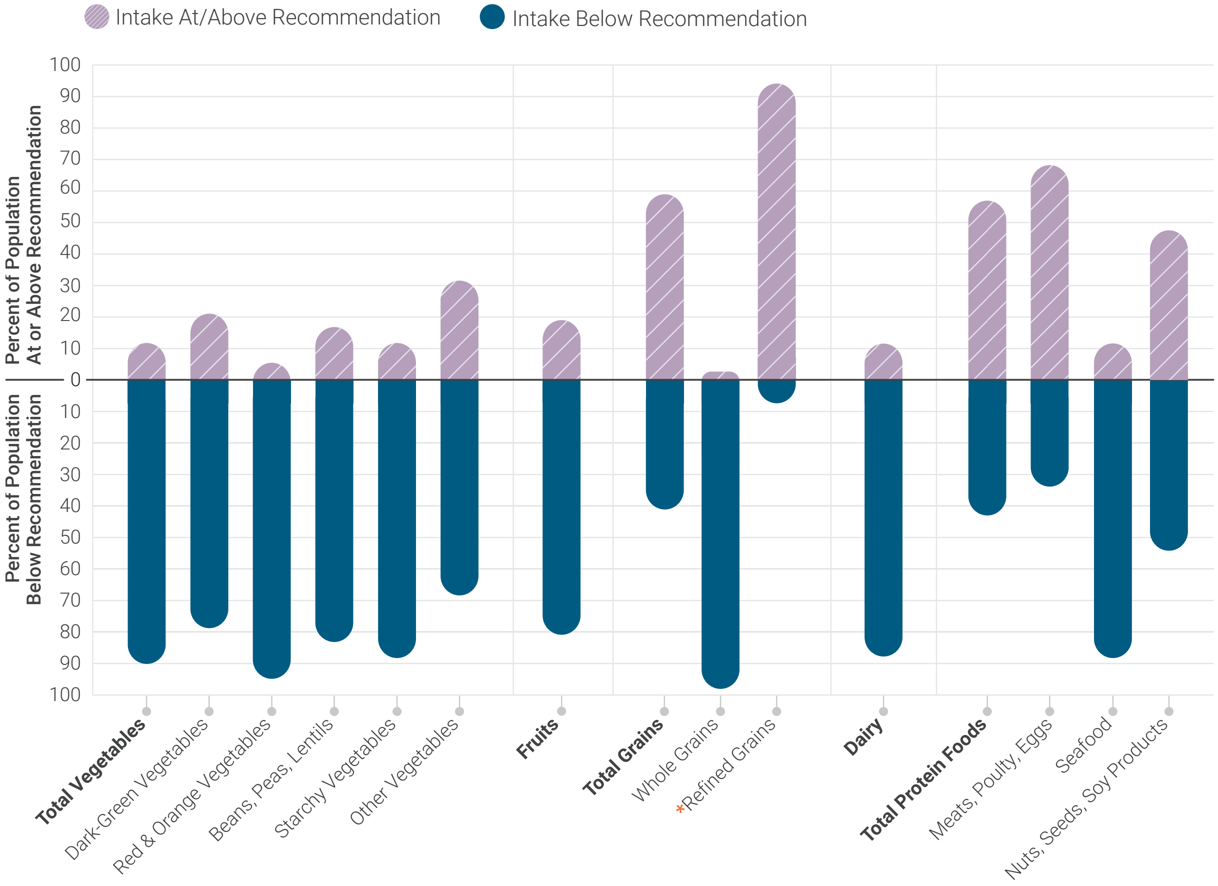
The *Dietary Guidelines* include recommendations for food groups—vegetables, fruits, grains, dairy, and protein foods—eaten at an appropriate calorie level and in forms with limited amounts of added sugars, saturated fat, and sodium. Science shows that these same core elements of a healthy dietary pattern are consistent across each life stage.

However, as shown in **Figure 1-6**, when compared to the Healthy U.S.-Style Dietary Pattern, most Americans have substantial room for improvement:

- More than 80 percent have dietary patterns that are low in vegetables, fruits, and dairy.
- More than half of the population is meeting or exceeding total grain and total protein foods recommendations, but are not meeting the recommendations for the subgroups within each of these food groups.

Figure 1-6

Dietary Intakes Compared to Recommendations: Percent of the U.S. Population Ages 1 and Older Who Are Below and At or Above Each Dietary Goal



The center (0) line is the goal or limit. For most, those represented by the **dark blue** section of the bars can improve their dietary pattern by shifting toward the center line.

***NOTE:** Recommended daily intake of whole grains is to be at least half of total grain consumption, and the limit for refined grains is to be no more than half of total grain consumption.

Data Source: Analysis of What We Eat in America, NHANES 2013-2016, ages 1 and older, 2 days dietary intake data, weighted. *Recommended Intake Ranges*: Healthy U.S.-Style Dietary Patterns (see ***Appendix 3***).

Learn More:

Table A3-2 in *Appendix 3* provides the food group-based Healthy U.S.-Style Dietary Pattern as a sample framework. Information on what counts as a cup- or ounce-equivalent is also provided under this table in **footnote c**.

About Beans, Peas, and Lentils

"Beans, peas, and lentils" is a new name for the vegetable subgroup formerly called "legumes (beans and peas)." Beans, peas, and lentils, which also are known as pulses, include the dried edible seeds of legumes. The foods in this vegetable subgroup have not changed. However, the new name of the subgroup more accurately reflects the category of foods included. Beans include varieties such as kidney beans, pinto beans, white beans, black beans, lima beans, and fava beans. Also included are dried peas (e.g., chickpeas, black-eyed peas, pigeon peas, and split peas) and lentils. Edamame, which is the soybean in the pod, is counted in the beans, peas, and lentils subgroup even though it is eaten fresh and not dried.

Because beans, peas, and lentils have a similar nutrient profile to foods in both the vegetable group and the protein foods group, they may be thought of as either a vegetable or a protein food when aiming to meet recommended intakes.

Green peas and green (string) beans are not counted in the beans, peas, and lentils subgroup because the nutrient content of these vegetables is more similar to vegetables in other subgroups. Green peas, which are not dried before consumption, are grouped with starchy vegetables and green beans are in the other vegetables subgroup, which includes onions, iceberg lettuce, celery, and cabbage. Generally, foods made from processed soybeans are a part of the nuts, seeds and soy products protein foods subgroup.

The following sections use the Healthy U.S.-Style Dietary Pattern to show how people can make shifts in their choices to achieve a healthy dietary pattern. Information on the amounts to consume—in cup and ounce equivalents—for each life stage is discussed in the subsequent life stage chapters and ***Appendix 3. USDA Dietary Patterns***.

Eating an appropriate mix of foods from the food groups and subgroups—within an appropriate calorie level—is important to promote health at each life stage. Each of the food groups and their subgroups provides an array of nutrients, and the amounts recommended reflect eating patterns that have been associated with positive health outcomes. Foods from all of the food groups should be eaten in nutrient-dense forms. The following sections describe special considerations related to each food group.

Vegetables

Healthy dietary patterns include a variety of vegetables from all five vegetable subgroups—dark green; red and orange; beans, peas, and lentils; starchy; and other. These include all fresh, frozen, canned, and dried options in cooked or raw forms, including 100% vegetable juices. Vegetables in their nutrient-dense forms have limited additions such as salt, butter, or creamy sauces. Examples of vegetables in each of the subgroups are available in ***Appendix 3***.

Almost 90 percent of the U.S. population does not meet the recommendation for vegetables. In addition, with few exceptions, the U.S. population does not meet intake recommendations for any of the vegetable subgroups. About 45 percent of all vegetables are eaten as a separate food item; about 40 percent as part of a mixed dish; and the remainder are mostly consumed as snack foods and condiments. Vegetables, when consumed on their own, are generally consumed in forms with additional sodium either from salt added in cooking or added sauces such as soy sauce or bottled stir-fry sauces. Many vegetables are consumed as part of mixed dishes like sandwiches, pasta with a tomato-based sauce, or casseroles that may have other ingredients that are sources of saturated fat and/or sodium.

For most individuals, following a healthy eating pattern will require an increase in total vegetable intake and from all vegetable subgroups, shifting to nutrient-dense forms, and an increase in the variety of different vegetables consumed over time. Vegetables can be part of many types of mixed dishes, from burgers, sandwiches, and tacos, to pizza, stews, pasta dishes, grain-based casseroles, and soups. Strategies to increase vegetable intake include increasing the vegetable content of mixed dishes or eating less of a main dish to allow for more vegetables as side dishes—keeping these nutrient dense.

Fruits

The fruit food group includes whole fruits and 100% fruit juice. Whole fruits include fresh, canned, frozen, and dried forms. Whole fruits can be eaten in various forms, such as cut, sliced, diced, or cubed. At least half of the recommended amount of fruit should come from whole fruit, rather than 100% juice. When juices are consumed, they should be 100% juice and always pasteurized or 100% juice diluted with water (without added sugars). Also, when selecting canned fruit, choose options that are canned with 100% juice or options lowest in added sugars.

About 80 percent of the U.S. population does not meet fruit recommendations. Over 60 percent of all fruit intake comes from whole forms—fresh, canned, frozen, or dried—or 100% juice. Fruit is generally consumed in nutrient-dense forms such as plain bananas, apples, oranges, or grapes. However, some fruit is consumed as part of foods that may not be nutrient-dense, such as fruit pie or similar desserts.

Most people would benefit from increasing their intake of fruit, mostly as whole fruits in nutrient-dense forms. A wide variety of fruits are available in the U.S. marketplace, some year-round and others seasonally. Strategies to help achieve this shift include choosing more whole fruits as snacks and including them in meals.

Grains

Healthy dietary patterns include whole grains and limit the intake of refined grains. At least half of total grains should be whole grains. Individuals who eat refined grains should choose enriched grains. Individuals who consume all of their grains as whole grains should include some that have been fortified with folic acid. Grain-based foods in nutrient-dense forms limit the additions of added sugars, saturated fat, and sodium.

A food is a 100% whole-grain food if the only grains it contains are whole grains. A 1 ounce-equivalent of 100% whole grains has 16 grams of whole grains. The recommendation to consume at least half of total grains as whole grains can be met in a number of ways.

- Choose 100% whole-grain foods for at least half of all grains consumed. The relative amount of whole grain in the food can be inferred by the placement of the grain in the ingredient list. The whole grain should be the first ingredient—or the second ingredient after water. For foods with multiple whole-grain ingredients, they should appear near the beginning of the ingredient list.

- Choose products with at least 50 percent of the total weight as whole-grain ingredients. If a food has at least 8 grams of whole grains per ounce-equivalent then half of the grains are whole-grain ingredients.

Most Americans meet recommendations for total grain intakes, although 98 percent fall below recommendations for whole grains and 74 percent exceed limits for refined grains. Almost half of all intake of refined grains is from mixed dishes, such as sandwiches, burgers, tacos, pizza, macaroni and cheese, and spaghetti with meatballs. About 20 percent of intake of refined grains comes from snacks and sweets, including crackers, pretzels, cakes, cookies, and other grain desserts. The remaining refined grains are generally eaten as separate food items, such as pancakes, cereals, breads, tortillas, pasta, or rice. About 60 percent of whole-grain intake in the United States is from individual food items, mostly cereals and crackers, rather than mixed dishes. Grains are generally consumed in forms with higher amounts of sodium (e.g., breads, tortillas, crackers) and added sugars (e.g., grain-based desserts, many ready-to-eat breakfast cereals) rather than the nutrient-dense forms. Further, grains are often consumed as part of mixed dishes, such as pasta dishes, casseroles, and sandwiches that may have other ingredients that are not in nutrient-dense forms.

Shifting from refined to whole-grain versions of commonly consumed foods—such as from white to 100% whole-wheat breads, and white to brown rice where culturally appropriate—would increase whole-grain intakes and lower refined grain intakes to help meet recommendations. Additionally, shifting to more nutrient-dense forms of grains, such as ready-to-eat breakfast cereals with less sugar, will help meet healthy dietary patterns. With careful planning, limited amounts of salt, butter, or sources of added sugars can be used to make

some grain-based foods more palatable while staying within calorie and nutrient limits, but most grains should be eaten in their most nutrient-dense forms. Reducing intakes of cakes, cookies, and other grain desserts will also support reducing refined grain intakes and staying within calorie needs.

Dairy and Fortified Soy Alternatives

Healthy dietary patterns feature dairy, including fat-free and low-fat (1%) milk, yogurt, and cheese. Individuals who are lactose intolerant can choose low-lactose and lactose-free dairy products. For individuals who choose dairy alternatives, fortified soy beverages (commonly known as "soy milk") and soy yogurt—which are fortified with calcium, vitamin A, and vitamin D—are included as part of the dairy group because they are similar to milk and yogurt based on nutrient composition and in their use in meals.

Other products sold as "milks" but made from plants (e.g., almond, rice, coconut, oat, and hemp "milks") may contain calcium and be consumed as a source of calcium, but they are not included as part of the dairy group because their overall nutritional content is not similar to dairy milk and fortified soy beverages. Therefore, consuming these beverages does not contribute to meeting the dairy group recommendation.

About 90 percent of the U.S. population does not meet dairy recommendations. The percent of Americans who drink milk as a beverage on a given day is 65 percent among young children, 34 percent in adolescents, and about 20 percent for adults. Dairy is generally consumed in forms with higher amounts of sodium (e.g., cheeses as part of mixed dishes such as sandwiches, pizza, and pasta dishes) and saturated fat (e.g., higher fat milks and yogurts) and can be a source of added sugars such as flavored milk, ice cream, and sweetened yogurts.

Most individuals would benefit by increasing intake of dairy in fat-free or low-fat forms, whether from milk (including lactose-free milk), yogurt, and cheese, or from fortified soy beverages or soy yogurt. Strategies to increase dairy intake include drinking fat-free or low-fat milk or a fortified soy beverage with meals or incorporating unsweetened fat-free or low-fat yogurt into breakfast or snacks.

Protein Foods

Healthy dietary patterns include a variety of protein foods in nutrient-dense forms. The protein foods group comprises a broad group of foods from both animal and plant sources, and includes several subgroups: meats, poultry, and eggs; seafood; and nuts, seeds, and soy products. As noted previously, beans, peas, and lentils may be considered a part of the protein foods group as well as the vegetable group. Protein also is found in some foods from other food groups, such as dairy. Meats and poultry vary in fat content and include both fresh and processed forms. Most intake of meats and poultry should be from fresh, frozen, or canned, and in lean forms (e.g., chicken breast or ground turkey) versus processed meats (e.g., hot dogs, sausages, ham, luncheon meats).

A healthy vegetarian dietary pattern can be achieved by incorporating protein foods from plants. Compared with the Healthy U.S.-Style Dietary Pattern, the Healthy Vegetarian Dietary Pattern is higher in soy products (particularly tofu and other processed soy products); beans, peas, and lentils; nuts and seeds; and whole grains. Inclusion of dairy and eggs make this an example of a lacto-ovo vegetarian pattern. Meats, poultry, and seafood are not included.

Seafood, which includes fish and shellfish, is a protein foods subgroup that provides beneficial fatty acids (e.g., eicosapentaenoic acid [EPA] and docosahexaenoic acid [DHA]). In addition, mercury, in the form of methylmercury, is found in seafood in varying levels. The U.S. Food and Drug Administration (FDA) and the U.S. Environmental Protection Agency (EPA) provide joint advice regarding seafood consumption to limit methylmercury exposure for women who might become or are pregnant or lactating and young children.[2] Seafood choices higher in EPA and DHA and lower in methylmercury are encouraged. Seafood varieties commonly consumed in the United States that are higher in EPA and DHA and lower in methylmercury include salmon, anchovies, sardines, Pacific oysters, and trout. Tilapia, shrimp, catfish, crab, and flounder are commonly consumed varieties that also are lower in methylmercury.

Intakes of protein foods are close to the target amounts, but many Americans do not meet recommendations for specific protein subgroups. About three-quarters of Americans meet or exceed the recommendation for meats, poultry, and eggs. However, almost 90 percent do not meet the recommendation for seafood and more than half do not meet the recommendation for nuts, seeds, and soy products. Slightly less than half (43%) of all protein foods are consumed as a separate food item, such as a chicken breast, a steak, an egg, a fish filet, or peanuts. About the same proportion are consumed as part of a mixed dish (48%), with the largest amount from sandwiches including burgers and tacos. Protein foods are generally consumed in forms with higher amounts of saturated fat or sodium and often part of mixed dishes (e.g., sandwiches, casseroles, pasta dishes) that include other ingredients that are not in nutrient-dense forms.

Shifts are needed within the protein foods group to add variety to subgroup intakes. Selecting from the seafood subgroup or the beans, peas, and lentils subgroup more often could help meet recommendations while still ensuring adequate protein consumption. Replacing processed or high-fat meats (e.g., hot dogs, sausages, bacon) with seafood could help lower intake of saturated fat and sodium, nutrients that are often consumed in excess of recommended limits. Replacing processed or high-fat meats with beans, peas, and lentils would have similar benefits, as well as increasing dietary fiber, a dietary component of public health concern.

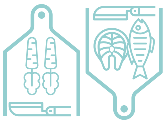
[2] Available at **FDA.gov/fishadvice** and **EPA.gov/fishadvice**.

Follow Food Safety Recommendations

An important part of healthy eating is keeping food safe. Individuals in their own homes can help keep food safe by following safe food handling practices. Four basic food safety principles work together to reduce the risk of foodborne illness—Clean, Separate, Cook, and Chill.

1: Clean
Wash hands and surfaces often.

2: Separate
Separate raw meats from other foods.



3: Cook
Cook food to safe internal temperatures.

4: Chill
Refrigerate foods promptly.

Some eating behaviors, such as consuming raw, undercooked, or unpasteurized food products, increase the risk of contracting a foodborne illness. Populations at increased risk of foodborne illness, or those preparing food for them, should use extra caution. These include women who are pregnant, young children, and older adults. Specific guidance for these life stages is discussed in subsequent chapters. Individuals with weakened immune systems are also at increased risk for foodborne illness. More information about food safety is available at:

- Your Gateway to Food Safety: **foodsafety.gov**
- USDA Food Safety Education campaigns: **fsis.usda.gov/wps/portal/fsis/topics/food-safety-education/teach-others/fsis-educational-campaigns**
- Fight BAC!®: **fightbac.org** and for Babies and Toddlers: **fightbac.org/kids/**
- CDC 4 Steps to Food Safety: **cdc.gov/foodsafety**
- FDA: Buy, Store & Serve Safe Food at **fda.gov/food/consumers/buy-store-serve-safe-food**

Oils

Oils are important to consider as part of a healthy dietary pattern as they provide essential fatty acids. Commonly consumed oils include canola, corn, olive, peanut, safflower, soybean, and sunflower oils. Oils also are naturally present in nuts, seeds, seafood, olives, and avocados. The fat in some tropical plants, such as coconut oil, palm kernel oil, and palm oil, are not included in the oils category because they contain a higher percentage of saturated fat than do other oils.

Strategies to shift intake include cooking with vegetable oil in place of fats high in saturated fat, including butter, shortening, lard, or coconut oil. However, some foods, such as desserts and sweet snacks, that are prepared with oils instead of fats high in saturated fat are still high in added sugars, and are thus not a nutrient-dense food choice.

Beverages

When choosing beverages in a healthy dietary pattern, both the calories and nutrients that they provide are important considerations. Beverages that are calorie-free—especially water—or that contribute beneficial nutrients, such as fat-free and low-fat milk and 100% juice, should be the primary beverages consumed. Coffee, tea, and flavored waters also are options, but the most nutrient-dense options for these beverages include little, if any, sweeteners or cream. For discussion on sugar-sweetened beverages or alcohol, see "**Added Sugars**" and "**Alcoholic Beverages**," respectively.

CAFFEINE

Caffeine is a dietary component that functions in the body as a stimulant. Most intake of caffeine in the United States comes from coffee, tea, and soda. Caffeine is a substance that is Generally Recognized as Safe (GRAS) in cola-type beverages by the Food and Drug Administration (FDA). For healthy adults, the FDA has cited 400 milligrams per day of caffeine as an amount not generally associated with dangerous, negative effects. Additional information related to caffeine is provided in subsequent life stage chapters.

Beverages and Added Sugars

Examples of beverages that often have added sugars are regular soda (i.e., not sugar-free), fruit drinks, sports drinks, energy drinks, sweetened waters, and coffee and tea beverages with added sugars. Coffee and tea beverages from restaurants can contain many extra calories because of the addition of cream or milk and sugar. See below for examples of 12-ounce beverages showing the added sugars and total calories.

Drink (12-ounce serving)	Total Calories	Added Sugars (Grams)	Added Sugars (Teaspoons)
Plain Water	0	0	0
Unsweetened Tea	0	0	0
Sports Drinks	97	20	5
Cafe Mocha	290	21	5
Chai Tea Latte	180	23	5 ½
Sweetened Tea	115	29	7
Regular Soda	156	37	9
Lemonade	171	43	10
Fruit Drinks	238	59	14

Data Source: U.S. Department of Agriculture, Agricultural Research Service. 2020. *USDA Food and Nutrient Database for Dietary Studies and USDA Food Patterns Equivalents Database 2017-2018.* Food Surveys Research Group Home Page, **ars.usda.gov/nea/bhnrc/fsrg**.

Dietary Components of Public Health Concern for Underconsumption

Current inadequate intake of nutrient-dense foods and beverages across food groups has resulted in underconsumption of some nutrients and dietary components. Calcium, potassium, dietary fiber, and vitamin D are considered dietary components of public health concern for the general U.S. population because low intakes are associated with health concerns. Additional dietary components that are underconsumed during specific life stages are highlighted in subsequent chapters.

If a healthy dietary pattern is consumed, amounts of calcium, potassium, and dietary fiber can meet recommendations. Individuals should be encouraged to make shifts to increase the intake of vegetables, fruits, beans, whole grains, and dairy to move intakes of these underconsumed dietary components closer to recommendations. In some cases, fortified foods and dietary supplements may be useful in providing one or more nutrients that otherwise may be consumed in less than recommended amounts. Vitamin D recommendations are harder to achieve through natural sources from diet alone and would require consuming foods and beverages fortified with vitamin D. In many cases, taking a vitamin D supplement may be appropriate especially when sunlight exposure is limited due to climate or the use of sunscreen. Lists of dietary sources of calcium, potassium, dietary fiber, and vitamin D are available at **DietaryGuidelines.gov**.

Guideline 4

Limit Foods and Beverages Higher in Added Sugars, Saturated Fat, and Sodium, and Limit Alcoholic Beverages

A healthy dietary pattern is designed to meet food group and nutrient recommendations while staying within calorie needs. Additionally, a healthy dietary pattern is designed to not exceed the Tolerable Upper Intake Level (UL) or Chronic Disease Risk Reduction (CDRR) level for nutrients. To achieve these goals, the pattern is based on consuming foods and beverages in their nutrient-dense forms—forms with the least amounts of added sugars, saturated fat, and sodium.

Most of the calories a person needs to eat each day—around 85 percent—are needed to meet food group recommendations healthfully, in nutrient-dense forms. The remaining calories—around 15 percent—are calories available for other uses, including for added sugars or saturated fat beyond the small amounts found in nutrient-dense forms of foods and beverages within the pattern, to consume more than the recommended amount of a food group, or for alcoholic beverages. This equates to 250 to 350 remaining calories for calorie patterns appropriate for most Americans.

Figure 1-7

The 85-15 Guide: Percentage of Calories Needed To Meet Food Group Needs With Nutrient-Dense Choices and Percentage Left for Other Uses

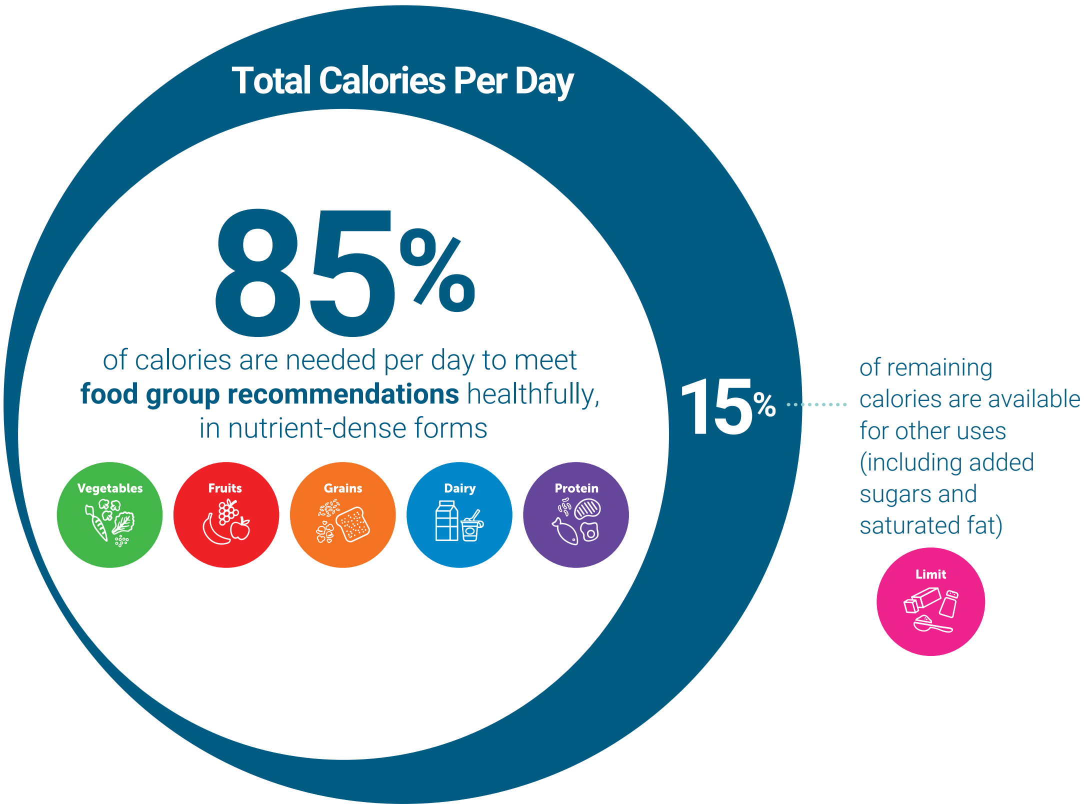
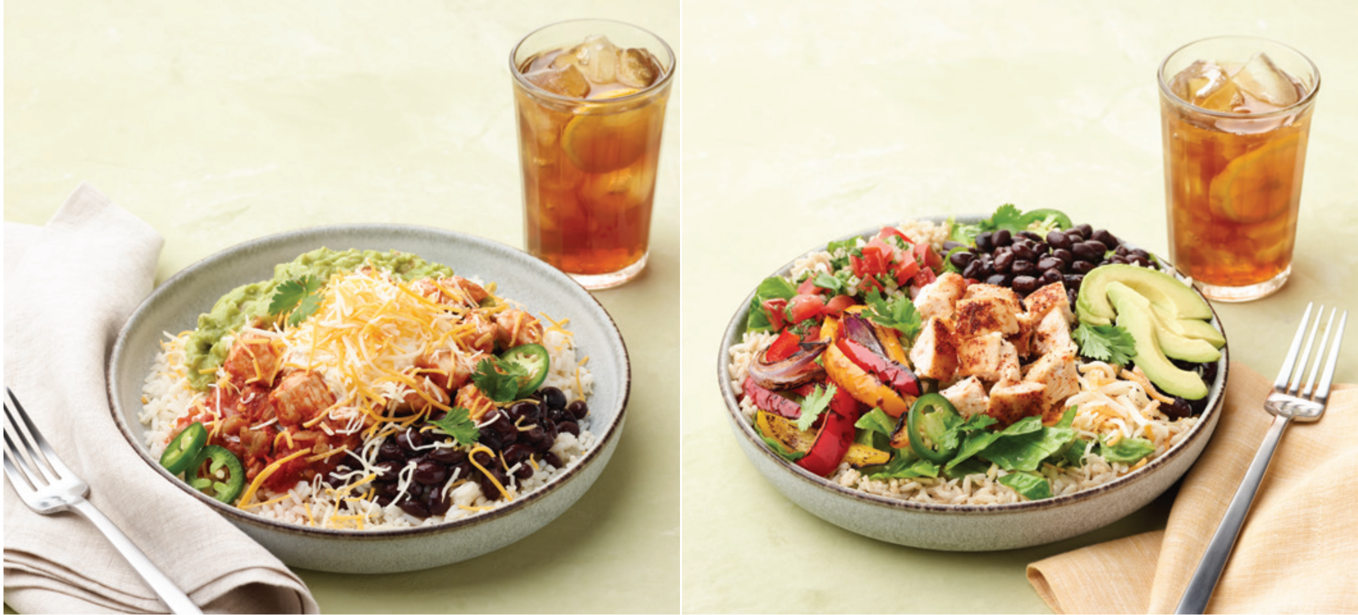


Figure 1-8

Making Nutrient-Dense Choices: One Meal At a Time

Slight changes to individual parts of a meal can make a big difference. This meal shows examples of small shifts to more nutrient-dense choices that significantly improve the nutritional profile of the meal overall while delivering on taste and satisfaction.



Typical Burrito Bowl Total Calories = 1,120	Nutrient-Dense Burrito Bowl Total Calories = 715
White rice (1½ cups)	Brown rice (1 cup) + Romaine lettuce (½ cup)
Black beans (⅓ cup)	Black beans, reduced sodium (⅓ cup)
Chicken cooked with sauce (2 ounces)	Grilled chicken with spice rub (2 ounces)
No grilled vegetables	Added grilled vegetables (⅓ cup)
Guacamole (½ cup)	Sliced avocado (5 slices)
Jarred salsa (¼ cup)	Fresh salsa/pico de gallo (¼ cup)
Sour cream (¼ cup)	No sour cream
Cheese (⅓ cup)	Reduced-fat cheese (⅓ cup)
Jalapeño (5 slices)	Jalapeño (5 slices)
Iced tea with sugar (16 ounces)	Iced tea, no sugar (16 ounces)

Figure 1-9

Making Healthy Choices: One Day At a Time

Small changes to more nutrient-dense, single food and beverage choices that, when combined, become a nutrient-dense meal, can lead to a whole day made up of nutrient-dense meals and snacks. The following example, which comes in under 2,000 calories, shows how people can make thoughtful choices that meet their food group needs, stay within limits, and, importantly, that they can enjoy.

BREAKFAST

Total calories: 375

- **Banana-Walnut Overnight Oats (350 calories):**
  - Oats (½ cup raw)
  - Low-fat, plain Greek yogurt (¼ cup)
  - Fat-free milk (¼ cup)
  - Banana (½ banana)
  - Walnuts (4 nuts)
  - Honey (1 tsp)
- **Coffee (25 calories):**
  - Coffee (1 cup)
  - Fat-free milk (¼ cup)

LUNCH

Total calories: 715

- **Chicken Burrito Bowl (710 calories)**
  - Brown rice (1 cup)
  - Romaine lettuce (½ cup)
  - Black beans, low sodium (⅓ cup)
  - Grilled chicken with spice rub (2 ounces)
  - Grilled vegetables (⅓ cup)
  - Sliced avocado (5 slices)
  - Fresh salsa/pico de gallo (¼ cup)
  - Reduced-fat cheese (⅓ cup)
  - Jalapeño (5 slices)
- **Iced Tea, No Sugar (16 ounces) (5 calories)**

The nutrient density and healthfulness of what people eat and drink often is determined ultimately by how a food item, dish or meal is prepared, at home and away from home, or produced by a manufacturer. Based on the U.S. food supply and marketplace, the examples of healthy dietary patterns in this edition are achievable through thoughtful, informed choices one decision, one meal, one day at a time—and consistently over time.

DINNER

Total calories: 585

- **Oven-Roasted Tilapia and Vegetables With Pasta (510 calories)**
  - Tilapia (4 ounces)
  - Broccoli (½ cup)
  - Carrots (⅓ cup)
  - Summer squash (⅓ cup)
  - Pasta (¾ cup cooked)
  - Garlic-herb oil (1 Tbsp)
- **Orange (1 medium) (75 calories)**
- **Sparkling Water (8 ounces) (0 calories)**

SNACKS

Total calories: 300

- **Air-Popped Popcorn (2 cups) (60 calories)**
- **Yogurt and Peaches (240 calories)**
  - Plain, low-fat Greek yogurt (1 cup yogurt)
  - Canned peaches packed in 100% juice (½ cup)

TOTAL CALORIES FOR THE DAY: 2,000

As such, a nutrient-dense diet, where most nutritional needs are met by 85% of the calories consumed, offers a small amount of leeway to add minimal amounts of added sugars or saturated fat to the diet. For example, one way to use remaining calories is to add small amounts of added sugars or saturated fat to *some* nutrient-dense foods to help make some foods more palatable while working towards meeting food group recommendations—for example, oatmeal with a small amount of brown sugar or vegetables prepared with small amounts of butter. However, to achieve a healthy dietary pattern, all (or mostly all) food group recommendations should be met with foods and beverages that are in nutrient-dense forms.

A healthy dietary pattern has little room available for foods and beverages high in added sugars, saturated fat, and/or sodium. Intakes of foods and beverages high in these components should be limited. These foods and beverages should be occasional choices—consumed in small portions.

While intakes of added sugars, saturated fat, and sodium should be limited, the guidance below is intended to allow programs and individuals to have some flexibility to choose a healthy dietary pattern within calorie limits that fits personal preferences and cultural traditions—and allows day-to-day flexibility to support a healthy dietary pattern over time. Additionally, if alcoholic beverages are consumed, intakes should be within the limits described in this chapter, and calories should be accounted for to keep total calorie intake at an appropriate level.

Added Sugars

A healthy dietary pattern limits added sugars to less than 10 percent of calories per day. Added sugars can help with preservation; contribute to functional attributes such as viscosity, texture, body, color, and browning capability, and/or help improve the palatability of some nutrient-dense foods. In fact, the nutrient-dense choices included in the Healthy U.S.-Style Dietary Pattern are based on availability in the U.S. food supply and include 17-50 calories from added sugars, or 1.5-2 percent of total calories.

Foods and beverages high in calories from added sugars should be limited to help achieve healthy dietary patterns within calorie limits. When added sugars in foods and beverages exceed 10 percent of calories, a healthy dietary pattern within calories limits is very difficult to achieve. Most Americans have less than 8 percent of calories available for added sugars, including the added sugars inherent to a healthy dietary pattern. The limit for added sugars is based on the following assumptions:

- Most calorie levels have less than 15 percent of calories remaining after meeting food group recommendations through nutrient-dense choices.

- Approximately half of remaining calories are consumed as saturated fat and half consumed as added sugars.

- Total saturated fat intakes meet the recommendation for less than 10 percent of total calorie intake.

- No alcoholic beverages are consumed.

- Overall calorie intake does not exceed intake needs to maintain or achieve a healthy weight.

Based on the assumptions above, an individual who needs 2,000 calories per day (based on age, sex, and physical activity level) has less than 7 percent of calories available for added sugars. Individuals who need 2,800 calories per day or less have less than 8 percent of calories available for added sugars. Individuals who need more than 3,000 calories may have a total of 9 to 10 percent of calories available for added sugars. In this portion of the population that requires high calorie intake, an upper limit of 10 percent of calories from added sugars may be consumed while still meeting food group recommendations in nutrient-dense forms. The 10 percent added sugar limit allows for flexibility in food choices over time but also requires careful planning. For example, if one chooses to eat less than the allotted amount of calories for saturated fat, 10 percent of added sugars may fit in a healthy dietary pattern.

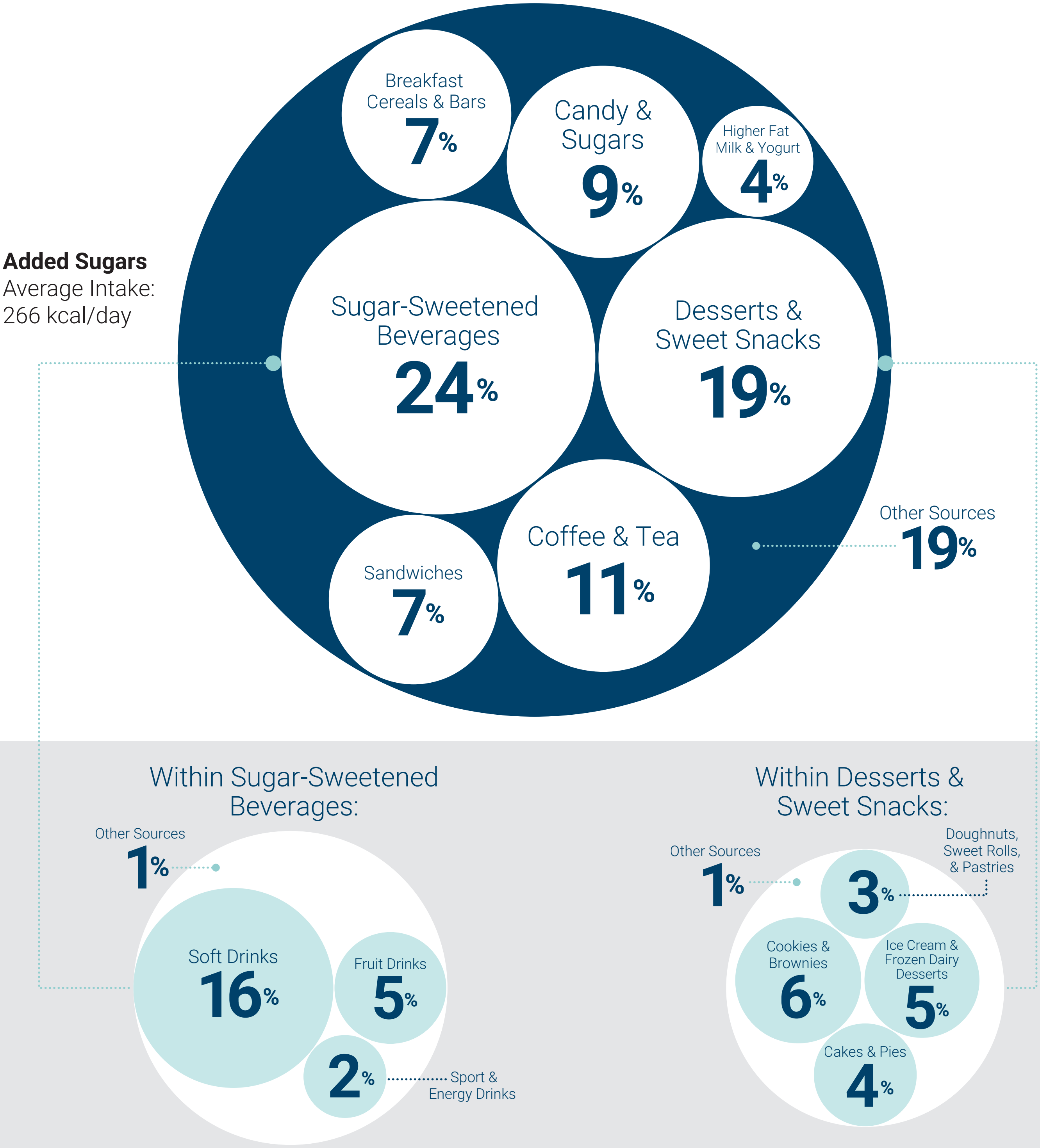
Added sugars account on average for almost 270 calories—or more than 13 percent of total calories—per day in the U.S. population. As shown in **Figure 1-10,** the major sources of added sugars in typical U.S. diets are sugar-sweetened beverages, desserts and sweet snacks, sweetened coffee and tea, and candy. Together, these food categories make up more than half of the intake of all added sugars while contributing very little to food group recommendations.

Individuals have many potential options for reducing the intake of added sugars, including reducing the intake of major sources of added sugars. Strategies include reducing portions, consuming these items less often, and selecting options low in added sugars. For those with a weight loss goal, limiting intake of foods and beverages high in added sugars is a strategy to help reduce calorie intake.

It should be noted that replacing added sugars with low- and no-calorie sweeteners may reduce calorie intake in the short-term and aid in weight management, yet questions remain about their effectiveness as a long-term weight management strategy. For additional information about high-intensity sweeteners permitted for use in food in the United States, see **fda.gov/food/food-additives-petitions/high-intensity-sweeteners**.

Figure 1-10

Top Sources and Average Intakes of Added Sugars: U.S. Population Ages 1 and Older



Data Source: Analysis of What We Eat in America, NHANES, 2013-2016, ages 1 and older, 2 days dietary intake data, weighted.

Saturated Fat

For those 2 years and older, intake of saturated fat should be limited to less than 10 percent of calories per day by replacing them with unsaturated fats, particularly polyunsaturated fats. Although some saturated fat is inherent in foods (e.g., high-fat meat), some sources are added (e.g., butter on toast). Similar to added sugars, some of the nutrient-dense choices included in the Healthy U.S.-Style Dietary Pattern include saturated fat. Approximately 5 percent of total calories inherent to the nutrient-dense foods in the Healthy U.S.-Style Dietary Pattern are from saturated fat from sources such as lean meat, poultry, and eggs; nuts and seeds; grains; and saturated fatty acids in oils. As such, there is little room to include additional saturated fat in a healthy dietary pattern while staying within limits for saturated fat and total calories.

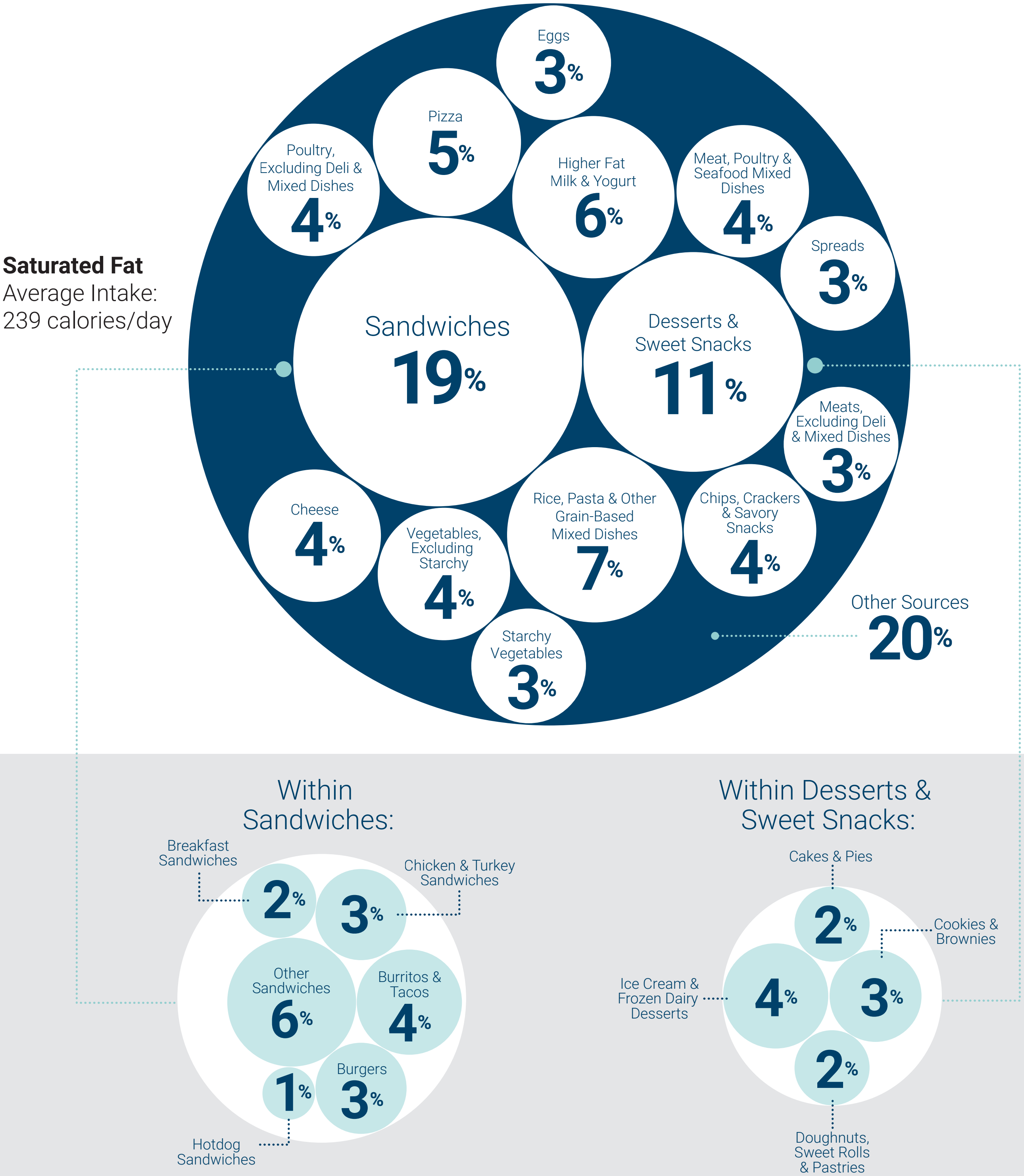
Current average intakes of saturated fat are 11 percent of calories. Only 23 percent of individuals consume amounts of saturated fat consistent with the limit of less than 10 percent of calories. The main sources of saturated fat in the U.S. diet include sandwiches, including burgers, tacos, and burritos; desserts and sweet snacks; and rice, pasta, and other grain-based mixed dishes (**Figure 1-11**). Saturated fat is commonly found in higher amounts in high-fat meat, full-fat dairy products (e.g., whole milk, ice cream, cheese), butter, coconut oil, and palm kernel and palm oil.

Strategies to lower saturated fat intake include reducing intakes of dessert and sweet snacks by consuming smaller portion sizes and eating these foods less often. Additional strategies include reading food labels to choose packaged foods lower in saturated fats and choosing lower fat forms of foods and beverages (e.g., fat-free or low-fat milk instead of 2 percent or whole milk; lean rather than fatty cuts of meat). When cooking and purchasing meals, select lean meat and lower fat cheese in place of high-fat meats and regular cheese—or replace them with ingredients with oils, such as nuts, seeds, or avocado. Cook and purchase products made with oils higher in polyunsaturated and monounsaturated fat (e.g., canola, corn, olive, peanut, safflower, soybean, and sunflower) rather than butter, shortening, or coconut or palm oils.

A note on *trans* fats and dietary cholesterol: The National Academies recommends that *trans* fat and dietary cholesterol consumption to be as low as possible without compromising the nutritional adequacy of the diet. The USDA Dietary Patterns are limited in *trans* fats and low in dietary cholesterol. Cholesterol and a small amount of *trans* fat occur naturally in some animal source foods. As of June 2018, partially hydrogenated oils (PHOs), the major source of artificial *trans* fat in the food supply, are no longer Generally Recognized as Safe (GRAS). Therefore, PHOs are no longer added to foods.

Figure 1-11

Top Sources and Average Intakes of Saturated Fat: U.S. Population Ages 1 and Older



Data Source: Analysis of What We Eat in America, NHANES, 2013-2016, ages 1 and older, 2 days dietary intake data, weighted.

Sodium

Sodium is an essential nutrient primarily consumed as salt (sodium chloride). Healthy eating patterns limit sodium to the Chronic Disease Risk Reduction (CDRR) levels defined by the National Academies—1,200 mg/day for ages 1 through 3; 1,500 mg/day for ages 4 through 8; 1,800 mg/day for ages 9 through 13; and 2,300 mg/day for all other age groups. The CDRR for sodium was established using evidence of the benefit of reducing sodium intake on cardiovascular risk and hypertension risk.

As a food ingredient, sodium is used in multiple ways, including curing meat, baking, as a thickening agent, as a flavor enhancer, as a preservative, and to retain moisture. The nutrient-dense choices in the Healthy U.S.-Style Dietary Pattern provide approximately 60-100 percent of the age-specific CDRR for sodium across calorie levels with amounts ranging from about 1,000 to 2,200 mg. For most calorie levels and at most ages, there is very little room for food choices that are high in sodium.

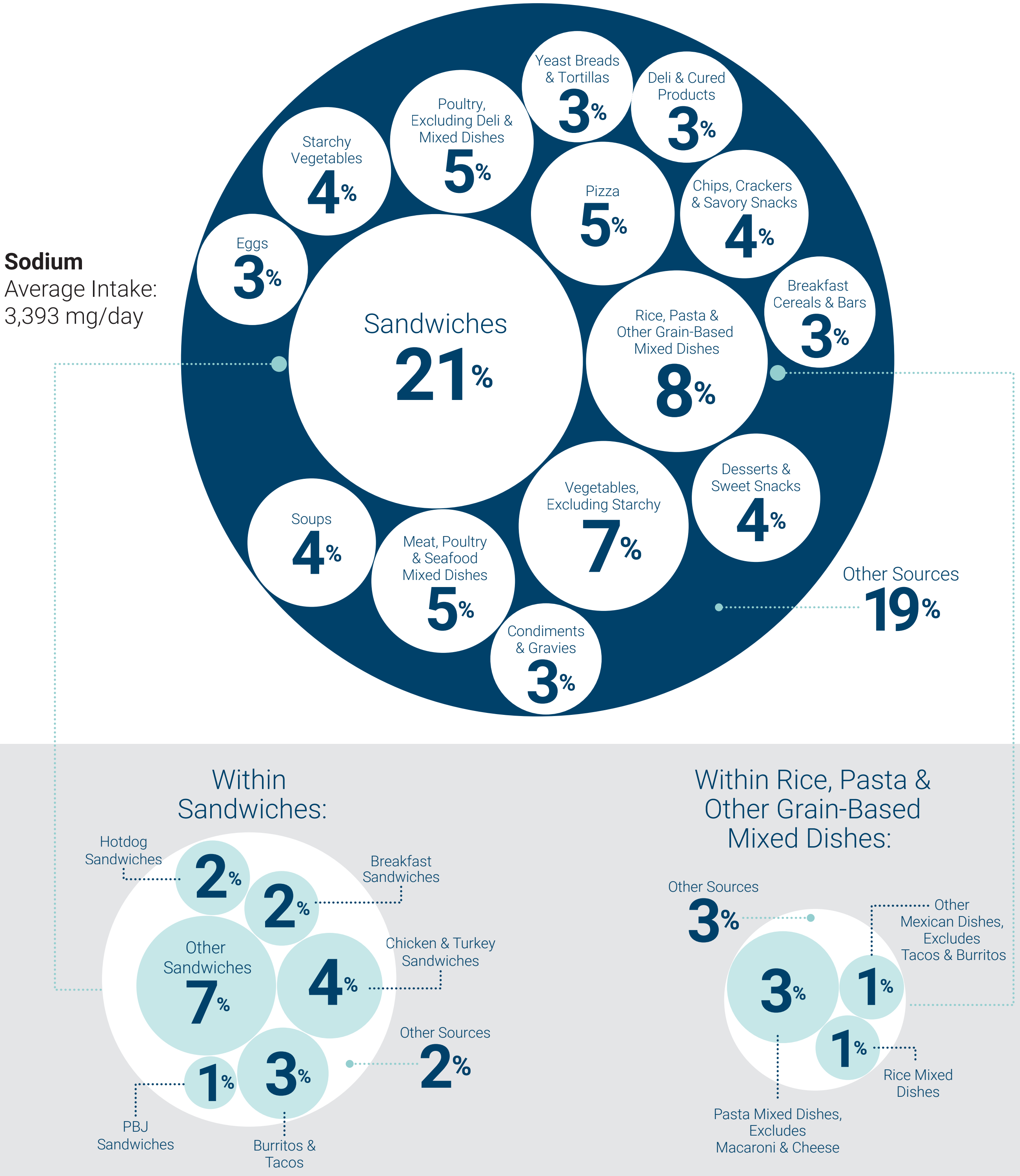
Average intakes of sodium are high across the U.S. population compared to the CDRRs. Average intakes for those ages 1 and older is 3,393 milligrams per day, with a range of about 2,000 to 5,000 mg per day. Only a small proportion of total sodium intake is from sodium inherent in foods or from salt added in home cooking or at the table. Most sodium consumed in the United States comes from salt added during commercial food processing and preparation, including foods prepared at restaurants.

Sodium is found in foods from almost all food categories across the food supply (**Figure 1-12**), including mixed dishes such as sandwiches, burgers, and tacos; rice, pasta, and grain dishes; pizza; meat, poultry, and seafood dishes; and soups. Calorie intake is highly associated with sodium intake (i.e., the more foods and beverages people consume, the more sodium they tend to consume).

Because sodium is found in so many foods, multiple strategies should be implemented to reduce sodium intake to the recommended limits. Careful choices are needed in all food groups to reduce intake. Strategies to lower sodium intake include cooking at home more often; using the Nutrition Facts label to choose products with less sodium, reduced sodium, or no-salt-added, etc.; and flavoring foods with herbs and spices instead of salt based on personal and cultural foodways.

Figure 1-12

Top Sources and Average Intakes of Sodium: U.S. Population Ages 1 and Older

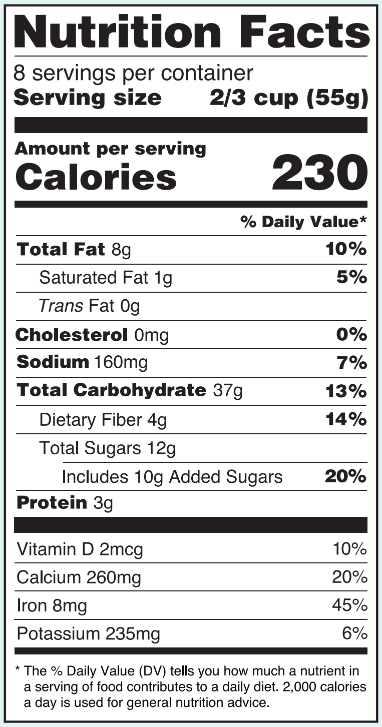


Sodium
Average Intake:
3,393 mg/day

Data Source: Analysis of What We Eat in America, NHANES, 2013-2016, ages 1 and older, 2 days dietary intake data, weighted.

Nutrition Facts Label

The Nutrition Facts label on packaged foods and beverages is a tool for making informed and healthy food choices. For the first time in more than 20 years, the U.S. Food and Drug Administration (FDA) has updated the Nutrition Facts label. There are a number of key changes to the label including:



Nutrition Facts

8 servings per container
Serving size **2/3 cup (55g)**

Amount per serving
Calories **230**

	% Daily Value*
Total Fat 8g	**10%**
Saturated Fat 1g	**5%**
Trans Fat 0g	
Cholesterol 0mg	**0%**
Sodium 160mg	**7%**
Total Carbohydrate 37g	**13%**
Dietary Fiber 4g	**14%**
Total Sugars 12g	
Includes 10g Added Sugars	**20%**
Protein 3g	
Vitamin D 2mcg	10%
Calcium 260mg	20%
Iron 8mg	45%
Potassium 235mg	6%

* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

The serving size information is now in large, bold font and has been updated to better reflect the amount that people typically eat and drink.

Calories are displayed in larger, bolder font.

Some Daily Values have been updated. The percent Daily Value (%DV) shows how much a nutrient in a serving of food contributes to a total daily diet. Five percent or less is low; 20 percent or more is high.

Added sugars, vitamin D, and potassium are now listed.

Along with the updated design, the Nutrition Facts label helps support healthy dietary patterns by providing information on nutrients of public health concern—dietary fiber, vitamin D, calcium, iron, and potassium—and on dietary components to limit, such as added sugars, saturated fat, and sodium.

More information on the Nutrition Facts label is available at: **fda.gov/NewNutritionFactsLabel**.

Menu Nutrition Labeling

Americans eat and drink about one-third of their calories from foods prepared away from home. Usually, these foods provide more calories, saturated fat, and sodium than meals prepared at home. To help individuals make informed and healthy decisions, many food establishments and chain restaurants list calories in foods or beverages on menus or menu boards and additional nutrition information is available upon request. More information is available at **fda.gov/CaloriesOnTheMenu**.

Alcoholic Beverages

The *Dietary Guidelines* does not recommend that individuals who do not drink alcohol start drinking for any reason. There are also some people who should not drink at all, such as if they are pregnant or might be pregnant; under the legal age for drinking; if they have certain medical conditions or are taking certain medications that can interact with alcohol; and if they are recovering from an alcohol use disorder or if they are unable to control the amount they drink. If adults age 21 years and older choose to drink alcoholic beverages, drinking less is better for health than drinking more.

Evidence indicates that, among those who drink, higher average alcohol consumption is associated with an increased risk of death from all causes compared with lower average alcohol consumption. Alcohol misuse or consuming alcohol in excess of recommendations increases risk of several other conditions such as liver disease, cardiovascular disease, injuries, and alcohol use disorders.

For the purposes of evaluating amounts of alcohol that may be consumed, the *Dietary Guidelines* defines drink equivalents. One alcoholic drink equivalent is defined as containing 14 grams (0.6 fl oz) of pure alcohol. The following count as one alcoholic drink equivalent: 12 fluid ounces of regular beer (5% alcohol), 5 fluid ounces of wine (12% alcohol), or 1.5 fluid ounces of 80 proof distilled spirits (40% alcohol). To help Americans move toward a healthy dietary pattern and minimize risks associated with drinking, adults of legal drinking age can choose not to drink or to drink in moderation by limiting intakes to 2 drinks or less in a day for men and 1 drink or less in a day for women, on days when alcohol is consumed. This is not intended as an average over several days, but rather the amount consumed on any single day. Binge drinking,[3] defined as 5 or more drinks for the typical adult male or 4 or more drinks for the typical adult female in about 2 hours, should be avoided. Emerging evidence suggests that even drinking within the recommended limits may increase the overall risk of death from various causes, such as from several types of cancer and some forms of cardiovascular disease. Alcohol has been found to increase risk for cancer, and for some types of cancer, the risk increases even at low levels of alcohol consumption (less than 1 drink in a day). Caution, therefore, is recommended.

Alcoholic beverages are not a component of the USDA Dietary Patterns. The amount of alcohol and calories in beverages varies and should be accounted for within the limits of healthy dietary patterns, so that calorie limits are not exceeded (see "**Calories in Alcoholic Beverages**").

Approximately 60 percent of adults report alcoholic beverage consumption in the past month. Of those, approximately 30 percent binge drink, sometimes multiple times per month. During days when men and women consume alcohol, their consumption typically exceeds current guidance. Among adults, including those who do not drink, alcoholic beverages contribute approximately 5 percent of calorie intake (3 to 4% of calories for women and 5 to 7% for men); this translates into approximately 9 percent of calories among those who drink. As such, among those who drink, alcoholic beverages, alone, account for most of the calories that remain after meeting food group recommendations in nutrient-dense forms—leaving very few calories for added sugars or saturated fat.

Adults who choose to drink, and are not among the individuals listed above who should not drink, are encouraged to limit daily intakes to align with the *Dietary Guidelines*—and to consider calories from alcoholic beverages so as not to exceed daily calorie limits.

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[3] More information is available at **niaaa.nih.gov/alcohol-health/overview-alcohol-consumption/moderate-binge-drinking**.

Calories in Alcoholic Beverages

Alcoholic beverages supply calories but few nutrients, and calories from alcoholic beverages should be accounted for to keep total calorie intake at an appropriate level. Alcoholic beverages may contain calories from both alcohol and other ingredients, such as soda, juice, and added sugars. It is important to consider ingredients and portion size. The range of calories in cocktails varies widely depending on serving size and ingredients. Examples of calories contained in alcoholic beverages include:

12 fluid ounces of regular beer (5% alcohol): about 150 calories

5 fluid ounces of wine (12% alcohol): about 120 calories

1.5 fluid ounces of 80 proof distilled spirits (40% alcohol): about 100 calories

7 fluid ounces of a rum (40% alcohol) and cola: about 190 calories

More information on calories in alcoholic beverages is available at **rethinkingdrinking.niaaa.nih.gov/Tools/Calculators/calorie-calculator.aspx**.

Support Healthy Dietary Patterns for All Americans

Everyone has a role to play to support access to healthy foods and beverages in multiple settings nationwide where people live, learn, work, play, and gather. Having access to healthy, safe, and affordable food is crucial for an individual to achieve a healthy dietary pattern. Concerted efforts within communities, businesses and industries, organizations, government, and other segments of society are needed to support individuals and families in making lifestyle choices that align with the *Dietary Guidelines*.

Food manufacturers and retail establishments can support Americans in achieving a healthy dietary pattern by providing healthy options in all the places where foods and beverages are purchased. During the past few decades, food products and menus have evolved substantially in response to consumer demand and public health concerns. Food reformulation and menu and retail modification opportunities include offering more vegetables, fruits, whole grains, low-fat and fat-free dairy, and a greater variety of protein foods that are nutrient dense, while also reducing sodium and added sugars, reducing saturated fat and replacing it with unsaturated fats, and reducing added refined starches. Portion sizes also can be reduced to help individuals make choices that better fit within their calorie needs. Food manufacturers are encouraged to consider the entire composition of the food or beverage, and not just individual nutrients or ingredients when developing or reformulating products.

Similarly, when developing or modifying menus, establishments can consider the range of offerings both within and across food groups and other dietary components to determine whether the healthy options offered reflect the proportions in healthy dietary patterns. In taking these actions, care should be taken to assess any potential unintended consequences so that as changes are made to better align with the *Dietary Guidelines*, undesirable changes are not introduced. For example, a change made to reduce the amount of added sugars in a product should not come at the expense of increasing the amount of saturated fat or sodium.

Food access is influenced by diverse factors, such as proximity to food retail outlets (e.g., the number and types of stores in an area), ability to prepare one's own meals or eat independently, and the availability of personal or public transportation. The underlying socioeconomic characteristics of a neighborhood also may influence an individual's ability to access foods to support healthy eating patterns.

In 2019, 10.5 percent of households were food insecure at least some time during the year. Food insecurity occurs when access to nutritionally adequate and safe food is limited or uncertain. Food insecurity can be temporary or persist over time, preventing individuals and families from following a healthy dietary pattern that aligns with the *Dietary Guidelines*. The prevalence of food insecurity typically rises during times of economic downturn as households experience greater hardship. Government and nongovernment nutrition assistance programs help alleviate food insecurity and play an essential role by providing food, meals, and educational resources so that participants can make healthy food choices within their budget. ***Chapters 2***, ***3***, ***4***, ***5***, and ***6*** highlight examples of these resources at each life stage.

As discussed in subsequent chapters, everyone has an important role in leading disease prevention efforts within their organizations and communities to make healthy eating an organizational and societal norm. Changes at multiple levels of society are needed, and these changes, in combination and over time, can have a meaningful impact on the health of current and future generations.

Looking Toward the Life Stages

This chapter has provided guidance about the fundamentals of a healthy dietary pattern. These fundamentals are remarkably consistent across life stages, even though each stage also has its own specific nutrition considerations. The following chapters build on this chapter and take a closer look at each of the life stages: ***Chapter 2*** provides a focused discussion of the unique nutritional needs of infants and toddlers. ***Chapters 3***, ***4***, ***5***, and ***6*** present recommended dietary patterns, describe current nutrition intakes, and provide tailored nutrition information specific to children and adolescents, adults, women who are pregnant or lactating, and older adults, respectively.

CHAPTER 2

Infants and Toddlers

Introduction

The time from birth until a child's second birthday is a critically important period for proper growth and development. It also is key for establishing healthy dietary patterns that may influence the trajectory of eating behaviors and health throughout the life course. During this period, nutrients critical for brain development and growth must be provided in adequate amounts. **Children in this age group consume small quantities of foods, so it's important to make every bite count!**

Key Recommendations

- **For about the first 6 months of life,** exclusively feed infants human milk. Continue to feed infants human milk through at least the first year of life, and longer if desired. Feed infants iron-fortified infant formula during the first year of life when human milk is unavailable.
- Provide infants with supplemental vitamin D beginning soon after birth.
- **At about 6 months,** introduce infants to nutrient-dense complementary foods.
- Introduce infants to potentially allergenic foods along with other complementary foods.
- Encourage infants and toddlers to consume a variety of foods from all food groups. Include foods rich in iron and zinc, particularly for infants fed human milk.
- Avoid foods and beverages with added sugars.
- Limit foods and beverages higher in sodium.
- As infants wean from human milk or infant formula, transition to a healthy dietary pattern.

Human milk feeding alone is the ideal form of nutrition from birth through about age 6 months. Human milk provides necessary nutrients, protective factors against disease, and other unique immunological benefits. If human milk is unavailable, infants should be fed an iron-fortified commercial infant formula. Once an infant is developmentally ready, foods and beverages should be introduced to complement human milk feeding. These complementary foods and beverages are essential to meet the nutrient requirements of infants starting at about age 6 months and should be selected carefully to help meet these needs. As an infant becomes a toddler, and learns to eat a variety of foods, flavors, and textures, the goal of complementary feeding becomes establishing a healthy dietary pattern and transitioning to a healthy family diet by age 2.

Putting the Key Recommendations Into Action

Feed Infants Human Milk for the First 6 Months, If Possible

Exclusive human milk feeding is one of the best ways to start an infant off on the path of lifelong healthy nutrition. Exclusive human milk feeding, commonly referred to as exclusive breastfeeding, refers to an infant consuming only human milk, and not in combination with infant formula and/or complementary foods or beverages (including water), except for medications or vitamin and mineral supplementation.

Human milk can support an infant's nutrient needs for about the first 6 months of life, with the exception of vitamin D and potentially iron. In addition to nutrients, human milk includes bioactive substances and immunologic properties that support infant health and growth and development.

U.S. data show that about 84 percent of infants born in 2017 were ever fed human milk, with only 25 percent fed human milk exclusively through age 6 months, and 35 percent continuing to be fed any human milk at age 12 months. Nearly one-quarter of infants were fed some human milk beyond age 12 months, with about 15 percent of toddlers being fed human milk at age 18 months.

Families may have a number of reasons for not having human milk for their infant. For example, a family may choose not to breastfeed, a child may be adopted, or the mother may be unable to produce a full milk supply or may be unable to pump and store milk safely due to family or workplace pressures. If human milk is unavailable, infants should be fed an iron-fortified commercial infant formula (i.e., labeled "with iron") regulated by the U.S. Food and Drug Administration (FDA), which is based on standards that ensure nutrient content and safety. Infant formulas are designed to meet the nutritional needs of infants and are not needed beyond age 12 months. It is important to take precautions to ensure that expressed human milk and prepared infant formula are handled and stored safely (see "**Proper Handling and Storage of Human Milk and Infant Formula**").

Donor Human Milk

If families do not have sufficient human milk for their infant but want to feed their infant human milk, they may look for alternative ways to obtain it. It is important for the family to obtain pasteurized donor human milk from a source, such as an accredited human milk bank, that has screened its donors and taken appropriate safety precautions. When human milk is obtained directly from individuals or through the internet, the donor is unlikely to have been screened for infectious diseases, and it is unknown whether the human milk has been collected or stored in a way to reduce possible safety risks to the baby. More information is available at **fda.gov/science-research/pediatrics/use-donor-human-milk**.

Proper Handling and Storage of Human Milk and Infant Formula

- Wash hands thoroughly before expressing human milk or preparing to feed human milk or infant formula.
- If expressing human milk, ensure pump parts are thoroughly cleaned before use.
- If preparing powdered infant formula, use a safe water source and follow instructions on the label.
- Refrigerate freshly expressed human milk within 4 hours for up to 4 days. Previously frozen and thawed human milk should be used within 24 hours. Thawed human milk should never be refrozen. Refrigerate prepared infant formula for up to 24 hours.
- Do not use a microwave to warm human milk or infant formula. Warm safely by placing the sealed container of human milk or infant formula in a bowl of warm water or under warm, running tap water.
- Once it has been offered to the infant, use or discard leftovers quickly (within 2 hours for human milk or 1 hour for infant formula).
- Thoroughly wash all infant feeding items, such as bottles and nipples. Consider sanitizing feeding items for infants younger than 3 months of age, infants born prematurely, or infants with a compromised immune system.

More information on storing and handling human milk is available at **cdc.gov/breastfeeding/recommendations/handling_breastmilk.htm**. More information on storing and preparing powdered infant formula is available at **cdc.gov/nutrition/downloads/prepare-store-powered-infant-formula-508.pdf**.

Additional information on how to clean, sanitize, and store infant feeding items is available at **cdc.gov/healthywater/hygiene/healthychildcare/infantfeeding/cleansanitize.html**.

Homemade infant formulas and those that are improperly and illegally imported into the United States without mandated FDA review and supervision should not be used. Toddler milks or toddler formulas should not be fed to infants, as they are not designed to meet the nutritional needs of infants.

Provide Infants Supplemental Vitamin D Beginning Soon After Birth

All infants who are fed human milk exclusively or who receive both human milk and infant formula (mixed fed) will need a vitamin D supplement of 400 IU per day beginning soon after birth. Infant formula is fortified with vitamin D, thus, when an infant is receiving full feeds of infant formula, vitamin D supplementation is not needed. Families who do not wish to provide a supplement directly to their infant should discuss with a healthcare provider the risks and benefits of maternal high dose supplementation options. Even when consuming a varied diet, achieving adequate vitamin D from foods and beverages (natural sources) alone is challenging, suggesting that young children may need to continue taking a vitamin D supplement after age 12 months. Parents, caregivers, and guardians should consult with a healthcare provider to determine how long supplementation is necessary.

Introduce Infants To Nutrient-Dense Complementary Foods at About 6 Months Old

At about age 6 months, infants should be introduced to nutrient-dense, developmentally appropriate foods to complement human milk or infant formula feedings. Some infants may show developmental signs of readiness before age 6 months (see "**Developmental Readiness for Beginning to Eat Solid Foods**"), but introducing complementary foods before age 4 months is not recommended. Waiting until after age 6 months to introduce foods also is not recommended. Starting around that time, complementary foods are necessary to ensure adequate nutrition and exposure to flavors, textures, and different types of foods. Infants should be given age- and developmentally appropriate foods to help prevent choking. It is important to introduce potentially allergenic foods along with other complementary foods. For infants fed human milk, it is particularly important to include complementary foods that are rich in iron and zinc when starting complementary foods (see ***Appendix 1: Nutritional Goals for Age-Sex Groups***).

About one-third (32%) of infants in the United States are introduced to complementary foods and beverages before age 4 months, highlighting the importance of providing guidance and support to parents, guardians, and caregivers on the timing of introduction to complementary foods. Early introduction of complementary foods and beverages is higher among infants receiving infant formula (42%) or a combination of infant formula and human milk (32%) than among infants exclusively fed human milk (19%).

Supplemental Vitamin B_{12}

Human milk has sufficient vitamin B_{12} to meet infant needs unless the mother's vitamin B_{12} status is inadequate. This can occur for different reasons, including when the mother eats a strictly vegan diet without any animal source foods. When the mother is at risk of vitamin B_{12} deficiency, human milk may not provide sufficient vitamin B_{12}. In these cases, the mother and/or infant fed human milk may require a vitamin B_{12} supplement. Parents, caregivers, and guardians should consult with a healthcare provider to determine whether supplementation is necessary.

Developmental Readiness for Beginning To Eat Solid Foods

The age at which infants reach different developmental stages will vary. Typically between age 4 and 6 months, infants develop the gross motor, oral, and fine motor skills necessary to begin to eat complementary foods. As an infant's oral skills develop, the thickness and texture of foods can gradually be varied. Signs that an infant is ready for complementary foods include:

- Being able to control head and neck.
- Sitting up alone or with support.
- Bringing objects to the mouth.
- Trying to grasp small objects, such as toys or food.
- Swallowing food rather than pushing it back out onto the chin.

Infants and young children should be given age- and developmentally appropriate foods to help prevent choking. Foods such as hot dogs, candy, nuts and seeds, raw carrots, grapes, popcorn, and chunks of peanut butter are some of the foods that can be a choking risk for young children. Parents, guardians, and caregivers are encouraged to take steps to decrease choking risks, including:

- Offering foods in the appropriate size, consistency, and shape that will allow an infant or young child to eat and swallow easily.
- Making sure the infant or young child is sitting up in a high chair or other safe, supervised place.
- Ensuring an adult is supervising feeding during mealtimes.
- Not putting infant cereal or other solid foods in an infant's bottle. This could increase the risk of choking and will not make the infant sleep longer.

More information on foods that can present choking hazards is available from USDA at **wicworks.fns.usda.gov/resources/reducing-risk-choking-young-children-mealtimes**.

Introduce Infants to Potentially Allergenic Foods Along With Other Complementary Foods

Potentially allergenic foods (e.g., peanuts, egg, cow milk products, tree nuts, wheat, crustacean shellfish, fish, and soy) should be introduced when other complementary foods are introduced to an infant's diet. Introducing peanut-containing foods in the first year reduces the risk that an infant will develop a food allergy to peanuts. Cow milk, as a beverage, should be introduced at age 12 months or later (see "**Establish a Healthy Beverage Pattern**"). There is no evidence that delaying introduction of allergenic foods, beyond when other complementary foods are introduced, helps to prevent food allergy. For more information, see "**For Infants at High Risk of Peanut Allergy, Introduce Peanut-Containing Foods at Age 4 to 6 Months.**"

For Infants at High Risk of Peanut Allergy, Introduce Peanut-Containing Foods at Age 4 to 6 Months

If an infant has severe eczema, egg allergy, or both (conditions that increase the risk of peanut allergy), age-appropriate, peanut-containing foods should be introduced into the diet as early as age 4 to 6 months. This will reduce the risk of developing peanut allergy.

Caregivers should check with the infant's healthcare provider before feeding the infant peanut-containing foods. A blood test or skin prick may be recommended to determine whether peanut should be introduced to the infant, and, if so, the safest way to introduce it. More information is available in the *Addendum Guidelines for the Prevention of Peanut Allergy in the United States* at **niaid.nih.gov/sites/default/files/addendum-peanut-allergy-prevention-guidelines.pdf**.

Encourage Infants and Toddlers To Consume a Variety of Complementary Foods and Beverages To Meet Energy and Nutrient Needs

Parents, caregivers, and guardians are encouraged to introduce foods across all the food groups—as described below and carrying forward the principles in ***Chapter 1***—including items that fit within a family's preferences, cultural traditions, and budget. Complementary foods and beverages should be rich in nutrients, meet calorie and nutrient requirements during this critical period of growth and development, and stay within limits of dietary components such as added sugars and sodium. Although the *Dietary Guidelines* does not provide a recommended dietary pattern for infants ages 6 through 11 months, infants should be on the path to a healthy dietary pattern that is recommended for those ages 12 through 23 months (see ***Appendix 3: USDA Dietary Patterns***).

In the United States, some dietary components are of public health concern for infants and toddlers. Iron is a dietary component of public health concern for underconsumption among older infants ages 6 through 11 months who are fed primarily human milk and consume inadequate iron from complementary foods. Older infants who are fed primarily human milk also underconsume zinc and protein from complementary foods, and vitamin D, choline, and potassium are notably underconsumed by all older infants. During the second year of life, the dietary components of public health concern for underconsumption are vitamin D, calcium, dietary fiber, and potassium and for overconsumption are added sugars and sodium. Lists of dietary sources of iron, calcium, potassium, dietary fiber, and vitamin D are available at **DietaryGuidelines.gov**.

INTRODUCE IRON-RICH FOODS TO INFANTS STARTING AT ABOUT 6 MONTHS OLD

Iron-rich foods (e.g., meats and seafood rich in heme iron and iron-fortified infant cereals) are important components of the infant's diet from age 6 through 11 months to maintain adequate iron status, which supports neurologic development and immune function. Infants are typically born with body stores of iron adequate for about the first 6 months of life, depending on gestational age, maternal iron status, and timing of umbilical cord clamping. By age 6 months, however, infants require an external source of iron apart from human milk.

Caregivers of infants exclusively fed human milk should talk with their pediatric care provider about whether there may be a need for infants supplementation with iron before age 6 months. A complementary food source of iron beginning at about 6 months is particularly important for infants fed human milk because the iron content of human milk is low and maternal iron intake during lactation does not increase its content. In the United States, an estimated 77 percent of infants fed human milk have inadequate iron intake during the second half of infancy, highlighting the importance of introducing iron-rich foods starting at age 6 months.

Infants receiving most of their milk feeds as iron-fortified infant formula are likely to need less iron from complementary foods beginning at 6 months of age. After

age 12 months, children have a lower iron requirement, but good food sources of iron are still needed to maintain adequate iron status and prevent deficiency.

INTRODUCE ZINC-RICH FOODS TO INFANTS STARTING AT ABOUT 6 MONTHS OLD

Zinc-rich complementary foods (e.g., meats, beans, zinc-fortified infant cereals) are important from age 6 months onwards to support adequate zinc status, which supports growth and immune function. Although the zinc content of human milk is initially high and efficiently absorbed, the concentration declines over the first 6 months of lactation and is not affected by maternal zinc intake. During the second half of infancy, approximately half (54%) of U.S. infants fed human milk have inadequate zinc intake. Prioritizing zinc-rich foods starting at 6 months of age to complement human milk feedings will help infants meet their requirement for zinc.

ENCOURAGE A VARIETY OF FOODS FROM ALL FOOD GROUPS TO INFANTS STARTING AT ABOUT 6 MONTHS OLD

To support nutrient adequacy, foster acceptance of healthy foods, and set intakes on a path toward a healthy pattern, it is important to encourage foods from all food groups. Because very young children are being exposed to new textures and flavors for the first time, it may take up to 8 to 10 exposures for an infant to accept a new type of food. Repeated offering of foods such as fruits and vegetables increases the likelihood of an infant accepting them. A nutrient-dense, diverse diet from age 6 through 23 months of life includes a variety of food sources from each food group.

- Protein foods, including meats, poultry, eggs, seafood, nuts, seeds, and soy products, are important sources of iron, zinc, protein, choline, and long chain polyunsaturated fatty acids. The long-chain polyunsaturated fatty acids, specifically the essential omega-3 and omega-6 fatty acids supplied through seafood, nuts, seeds, and oils, influence the infant's fatty acid status and are among the key nutrients needed for the rapid brain development that occurs through the infant's first 2 years of life. Some types of fish such as salmon and trout are also natural sources of vitamin D. To limit exposure to methylmercury from seafood, the U.S. Food and Drug Administration and the U.S. Environmental Protection Agency issued joint guidance regarding the types of seafood to choose.[1]

- Vegetables and fruits, especially those rich in potassium, vitamin A, and vitamin C, should be offered to infants and toddlers age 6 through 23 months. The vegetable subgroup of beans, peas, and lentils also provides a good source of protein and dietary fiber.
- For dairy, families can introduce yogurt and cheese, including soy-based yogurt, before 12 months. However, infants should not consume cow milk, as a beverage, or fortified soy beverage, before age 12 months as a replacement for human milk or infant formula (see "**Cow Milk and Fortified Soy Beverages**"). In the second year of life, when calcium requirements increase, dairy products, including milk, yogurt, cheese, and fortified soy beverages and soy yogurt provide a good source of calcium. Vitamin D-fortified milk and soy beverages also provide a good source of vitamin D. For those younger than the age of 2, offer dairy products without added sugar (see "**Avoid Added Sugars**").
- Grains, including iron-fortified infant cereal, play an important role in meeting nutrient needs during this life stage. Infant cereals fortified with iron include oat, barley, multigrain, and rice cereals. Rice cereal fortified with iron is a good source of nutrients for infants, but rice cereal shouldn't be the only type of cereal given to infants. Offering young children whole grains more often than refined grains will increase dietary fiber as well as potassium intake during the second year of life and help young children establish healthy dietary practices.

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[1] U.S. Food and Drug Administration and U.S. Environmental Protection Agency. Advice About Eating Fish. Available at **FDA.gov/fishadvice**; **EPA.gov/fishadvice**.

DIETARY COMPONENTS TO LIMIT

While encouraging intake from each food group, some dietary components should be limited.

Avoid Added Sugars
Infants and young children have virtually no room in their diet for added sugars. This is because the nutrient requirements for infants and young children are quite high relative to their size, but the amount of complementary foods they consume is small. Complementary foods need to be nutrient-dense and not contain additional calories from added sugars. In addition, low- and no-calorie sweeteners, which can also be called high-intensity sweeteners, are not recommended for children younger than age 2. Taste preferences are being formed during this time period, and infants and young children may develop preferences for overly sweet foods if introduced to very sweet foods during this timeframe. For more information on added sugars, see ***Chapter 1.***

Avoid Foods Higher in Sodium
Sodium is found in a number of foods, including some salty snacks, commercial toddler foods, and processed meats. In addition to keeping sodium intake within limits for toddlers (see ***Appendix 1***), another reason to avoid high-sodium foods is that taste preferences for salty food may be established early in life. Choose fresh or low-sodium frozen foods, when available, and low-sodium canned foods to minimize sodium content. For more information on sodium, see ***Chapter 1***.

Avoid Honey and Unpasteurized Foods and Beverages
Infants should not be given any foods containing raw or cooked honey. Honey can contain the *Clostridium botulinum* organism that could cause serious illness or death among infants. Infants and young children also should not be given any unpasteurized foods or beverages, such as unpasteurized juices, milk, yogurt, or cheeses, as they could contain harmful bacteria.

Establish a Healthy Beverage Pattern

An important part of establishing an overall healthy dietary pattern is careful consideration of beverages. Guidance for different beverage categories is provided below.

WATER

For healthy infants with adequate intake of human milk or infant formula, supplemental water is typically not needed in the first 6 months. Small amounts (up to 4 to 8 ounces per day) of plain, fluoridated drinking water can be given to infants with the introduction of complementary foods. Plain, fluoridated drinking water intake can slowly be increased after age 1 to meet hydration and fluoride needs.

COW MILK AND FORTIFIED SOY BEVERAGES

Infants should not consume cow milk or fortified soy beverages before age 12 months to replace human milk or infant formula. Cow milk does not have the correct amount of nutrients for infants, and its higher protein and mineral content are hard for an infant's kidneys and digestive system to process. Plain cow milk (whole milk) or fortified unsweetened soy beverage can be offered beginning around 12 months of age to help meet calcium, potassium, vitamin D, and protein needs. Flavored milks for children age 12 through 23 months should be avoided because they contain added sugars.

PLANT-BASED MILK ALTERNATIVES

Plant-based milk alternatives, which are sometimes referred to as milk alternatives, include beverages made from plants, such as soy, oat, rice, coconut, and almond. These beverages should not be used in the first year of life to replace human milk or infant formula. They may come in different flavors and some forms have added sugars. Unsweetened versions of these beverages may be accommodated in small amounts in the diet during the second year of life, but most have significantly less protein than cow milk and are not always fortified with calcium and vitamin D. Among plant-based milk alternatives, only fortified soy beverage is currently considered a dairy equivalent. Thus, consuming other plant-based beverages does not contribute to meeting dairy recommendations.

100% FRUIT JUICE

Before age 12 months, 100% fruit or vegetable juices should not be given to infants. In the second year of life, fruit juice is not necessary, and most fruit intake should come from eating whole fruit. If 100% fruit juice is provided, up to 4 ounces per day can fit in a healthy dietary pattern. Juices that contain added sugars should be avoided.

TODDLER MILK AND TODDLER DRINKS

There are no clear needs for toddler milks or drinks. Needed nutrients can be obtained from cow milk or fortified soy beverage and appropriate solid foods. Toddler milks and toddler drinks are drinks supplemented with nutrients, and typically contain added sugars. A variety of nutrient-dense complementary foods and beverages without added sugars should be emphasized for achieving nutrient recommendations.

SUGAR-SWEETENED BEVERAGES

Sugar-sweetened beverages (e.g., regular soda, juice drinks [not 100% fruit juice], sports drinks, and flavored water with sugar) should not be given to children younger than age 2. Drinks labeled as fruit drinks or fruit-flavored drinks are not the same as 100% fruit juice and contain added sugars. These beverages displace nutrient-dense beverages and foods in the diet of young children. Infants and toddlers do not have room in their diets for the additional calories from added sugars found in these beverages. In addition, sugar-sweetened beverage intake in infancy and early childhood may predispose children to consume more of these beverages later in life.

CAFFEINATED BEVERAGES

Concerns exist about potential negative health effects of caffeine for young children, and no safe limits of caffeine have been established for this age group. Caffeine is a stimulant that can occur naturally in foods and beverages or as an additive. Major sources of caffeine for Americans include beverages such as soft drinks, tea, coffee, and sports drinks. Beverages containing caffeine should be avoided for children younger than age 2.

Healthy Dietary Pattern During a Toddler's Second Year of Life

In the second year of life, toddlers consume less human milk, and infant formula is not recommended. Calories and nutrients should predominantly be met from a healthy dietary pattern of age-appropriate foods and beverages. The Healthy U.S.-Style Dietary Pattern presented here is intended for toddlers ages 12 through 23 months who no longer consume human milk or infant formula. The pattern represents the types and amounts of foods needed to meet energy and nutrition requirements for this period (**Table 2-1**). For toddlers who are still consuming human milk (approximately one-third at 12 months and 15 percent at 18 months), a healthy dietary pattern should include a similar combination of nutrient-dense complementary foods and beverages.

Table 2-1 displays the Healthy U.S.-Style Dietary Pattern to illustrate the specific amounts and limits for food groups and other dietary components that make up healthy dietary patterns. The pattern is provided at calorie levels ranging from 700 to 1,000 calories per day, which are appropriate for most toddlers ages 12 through 23 months (see ***Appendix 2. Estimated Calorie Needs***). A healthy dietary pattern includes a variety of nutrient-dense fruits, vegetables, grains, protein foods (including lean meats, poultry, eggs, seafood, nuts, and seeds), dairy (including milk, yogurt, and cheese), and oils. Based on FDA and EPA's joint "Advice About Eating Fish," young children should eat seafood lowest in methylmercury, and certain species of seafood should be avoided.[2] If young children are lower in body weight, they should eat less seafood than the amounts in the Healthy U.S.-Style Dietary Pattern. More information is available on the FDA or EPA websites at **FDA.gov/fishadvice** and **EPA.gov/fishadvice**.

After food group and subgroup recommendations are met, a small number of calories are allocated to oils. The recommendation to limit saturated fat to less than 10 percent of calories per day does not apply to those younger than age 2, and the inclusion of higher fat versions of dairy is a notable difference in the pattern for toddlers ages 12 through 23 months compared to patterns for ages 2 and older. However, no calories remain in the pattern for additional saturated fat or for added sugars. To illustrate the concept of nutrient density, **Figure 2-1** shows examples of foods and beverages appropriate for this life stage in forms that are not in nutrient-dense forms compared to those that are in nutrient-dense forms. This dietary pattern requires careful choices of foods and beverages but does not require inclusion of fortified products specifically formulated for infants or toddlers to meet nutrient recommendations.

Figure 2-1

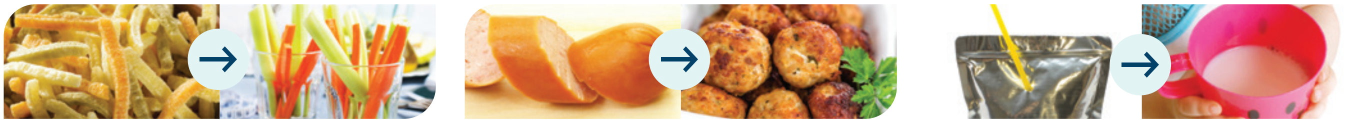
Make Healthy Shifts To Empower Toddlers To Eat Nutrient-Dense Foods in Dietary Patterns

Science shows that early food preferences influence later food choices. Make the first choice the healthiest choices that set the toddlers on a path of making nutrient-dense choices in the years to come. Examples of shifts in common choices to healthier, more nutrient-dense food choices include:

Cereal with Added Sugars → **Cereal with Minimal Added Sugars**

Fruit Products with Added Sugars → **Fruit (e.g., canned in 100% juice)**

Fried Vegetables → **Roasted Vegetables**



High-sodium Snacks → **Vegetables**

High-sodium Meats → **Ground Lean Meats**

Beverages with Added Sugars → **Unsweetened Beverages**

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[2] **If consuming up to 2 ounces of seafood per week**, children should only be fed cooked varieties from the "Best Choices" list in the FDA/EPA joint "Advice About Eating Fish," available at **FDA.gov/fishadvice** and **EPA.gov/fishadvice**. **If consuming up to 3 ounces of seafood per week**, children should only be fed cooked varieties from the "Best Choices" list that contain even lower methylmercury: flatfish (e.g., flounder), salmon, tilapia, shrimp, catfish, crab, trout, haddock, oysters, sardines, squid, pollock, anchovies, crawfish, mullet, scallops, whiting, clams, shad, and Atlantic mackerel. If consuming up to 3 ounces of seafood per week, many commonly consumed varieties of seafood should be avoided because they cannot be consumed at 3 ounces per week by children without the potential of exceeding safe methylmercury limits; examples that should not be consumed include: canned light tuna or white (albacore) tuna, cod, perch, black sea bass. For a complete list please see: **FDA.gov/fishadvice** and **EPA.gov/fishadvice**.

Table 2-1

Healthy U.S.-Style Dietary Pattern for Toddlers Ages 12 Through 23 Months Who Are No Longer Receiving Human Milk or Infant Formula, With Daily or Weekly Amounts From Food Groups, Subgroups, and Components

CALORIE LEVEL OF PATTERN[a]	700	800	900	1,000
FOOD GROUP OR SUBGROUP[b,c]	**Daily Amount of Food From Each Group[d]** (Vegetable and protein foods subgroup amounts are per week.)			
Vegetables (cup eq/day)	**⅔**	**¾**	**1**	**1**
	Vegetable Subgroups in Weekly Amounts			
Dark-Green Vegetables (cup eq/wk)	1	⅓	½	½
Red and Orange Vegetables (cup eq/wk)	1	1 ¾	2 ½	2 ½
Beans, Peas, Lentils (cup eq/wk)	¾	⅓	½	½
Starchy Vegetables (cup eq/wk)	1	1 ½	2	2
Other Vegetables (cup eq/wk)	¾	1 ¼	1 ½	1 ½
Fruits (cup eq/day)	**½**	**¾**	**1**	**1**
Grains (ounce eq/day)	**1 ¾**	**2 ¼**	**2 ½**	**3**
Whole Grains (ounce eq/day)	1 ½	2	2	2
Refined Grains (ounce eq/day)	¼	¼	½	1
Dairy (cup eq/day)	**1 ⅔**	**1 ¾**	**2**	**2**
Protein Foods (ounce eq/day)	**2**	**2**	**2**	**2**
	Protein Foods Subgroups in Weekly Amounts			
Meats, Poultry (ounce eq/wk)	8 ¾	7	7	7 ¾
Eggs (ounce eq/wk)	2	2 ¾	2 ½	2 ½
Seafood (ounce eq/wk)[e]	2-3	2-3	2-3	2-3
Nuts, Seeds, Soy Products (ounce eq/wk)	1	1	1 ¼	1 ¼
Oils (grams/day)	**9**	**9**	**8**	**13**

[a] Calorie level ranges: Energy levels are calculated based on median length and body weight reference individuals. Calorie needs vary based on many factors. The DRI Calculator for Healthcare Professionals, available at **usda.gov/fnic/dri-calculator**, can be used to estimate calorie needs based on age, sex, and weight.

[b] Definitions for each food group and subgroup and quantity (i.e., cup or ounce equivalents) are provided in ***Chapter 1*** and are compiled in ***Appendix 3***.

[c] All foods are assumed to be in nutrient-dense forms and prepared with minimal added sugars, refined starches, or sodium. Foods are also lean or in low-fat forms with the exception of dairy, which includes whole-fat fluid milk, reduced-fat plain yogurts, and reduced-fat cheese. There are no calories available for additional added sugars, saturated fat, or to eat more than the recommended amount of food in a food group.

[d] In some cases, food subgroup amounts are greatest at the lower calorie levels to help achieve nutrient adequacy when relatively small number of calories are required.

[e] **If consuming up to 2 ounces of seafood per week**, children should only be fed cooked varieties from the “Best Choices” list in the FDA/EPA joint “Advice About Eating Fish,” available at **FDA.gov/fishadvice** and **EPA.gov/fishadvice**. **If consuming up to 3 ounces of seafood per week**, children should only be fed cooked varieties from the “Best Choices” list that contain even lower methylmercury: flatfish (e.g., flounder), salmon, tilapia, shrimp, catfish, crab, trout, haddock, oysters, sardines, squid, pollock, anchovies, crawfish, mullet, scallops, whiting, clams, shad, and Atlantic mackerel. If consuming up to 3 ounces of seafood per week, many commonly consumed varieties of seafood should be avoided because they cannot be consumed at 3 ounces per week by children without the potential of exceeding safe methylmercury limits; examples that should not be consumed include: canned light tuna or white (albacore) tuna, cod, perch, black sea bass. For a complete list please see: **FDA.gov/fishadvice** and **EPA.gov/fishadvice**.

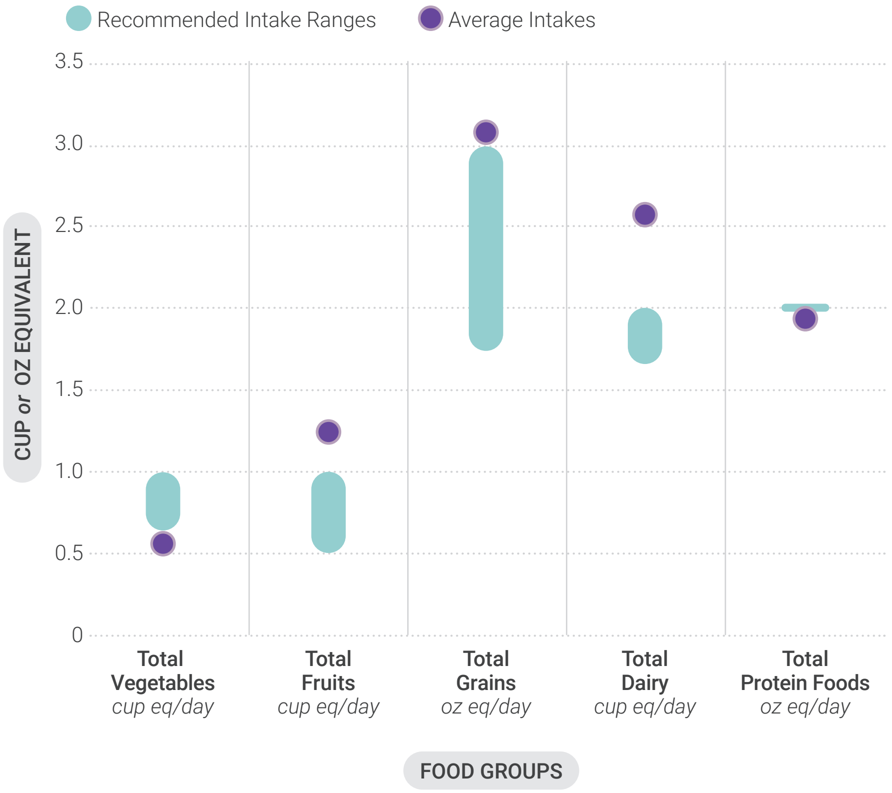
Current Intakes

Figure 2-2 and **2-3** highlight the dietary intakes of toddlers during the second year of life. Average intakes of the food groups are compared to the range of recommended intakes at the calorie levels most relevant to males and females in this age group (**Figure 2-2**). Additionally, the average intakes and range of intakes of added sugars, saturated fat, and sodium are displayed. Average intakes compared to recommended intake ranges of the subgroups for grains are represented in daily amounts; subgroups for vegetables and protein foods are represented in weekly amounts (**Figure 2-3**).

Figure 2-2

Current Intakes: Ages 12 Through 23 Months

Average Daily Food Group Intakes Compared to Recommended Intake Ranges



Average Intakes of Added Sugars, Saturated Fat, and Sodium

Added Sugars
Limit: **Avoid**
Average Intakes
104 kcals

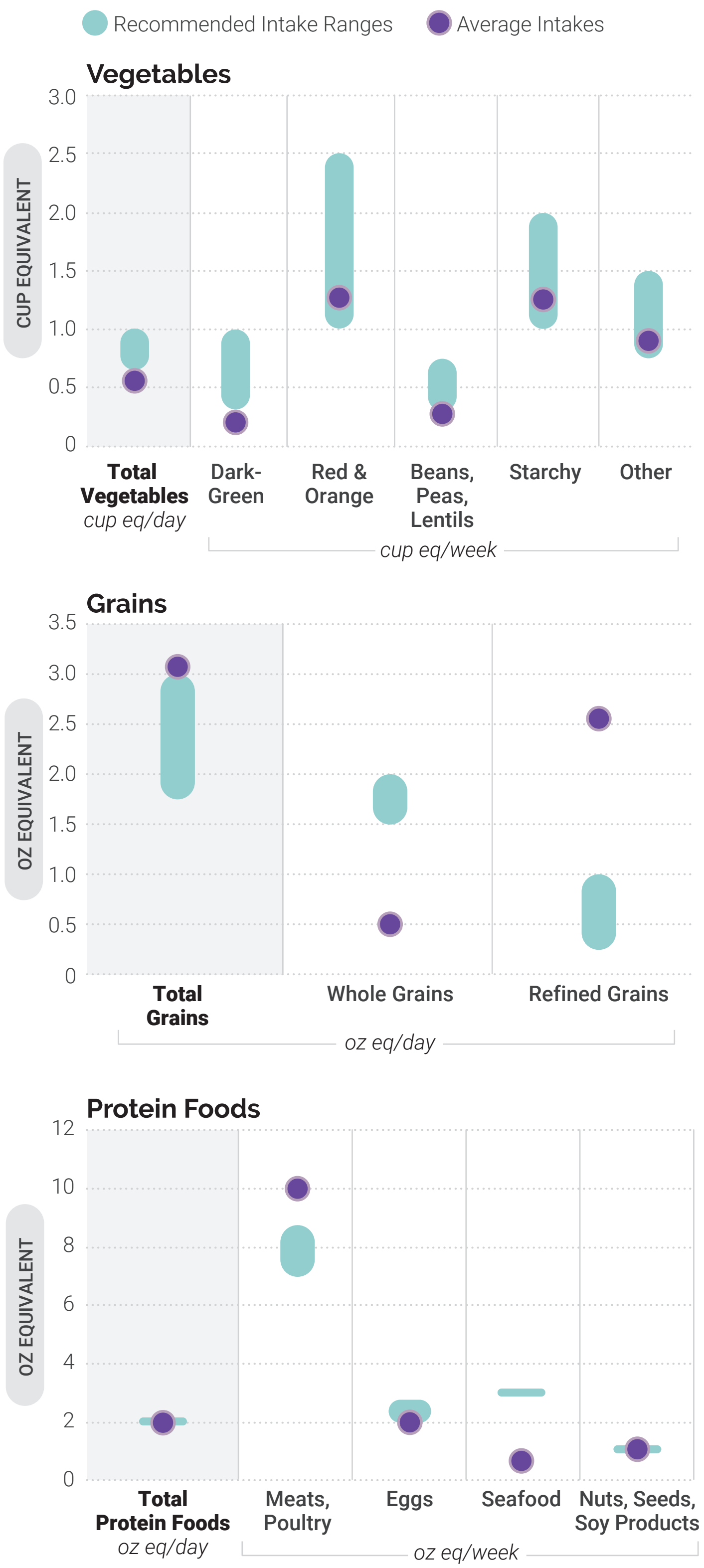
Saturated Fat
Limit: **N/A**
Average Intakes
167 kcals

Sodium
Limit: **1,200 mg**
Average Intakes
1,586 mg

Data Sources: *Average Intakes:* Analysis of What We Eat in America, NHANES 2007-2016, day 1 dietary intake data, weighted. *Recommended Intake Ranges*: Healthy U.S.-Style Dietary Patterns (see ***Appendix 3***).

Figure 2-3

Average Intakes of Subgroups Compared to Recommended Intake Ranges: Ages 12 Through 23 Months



Data Sources: *Average Intakes:* Analysis of What We Eat in America, NHANES 2007-2016, day 1 dietary intake data, weighted. *Recommended Intake Ranges:* Healthy U.S.-Style Dietary Patterns (see ***Appendix 3***).

Approximately 60 percent of toddlers meet or exceed recommended intakes for fruit. A majority of fruit is consumed as whole fruit (fresh, canned, puréed, frozen) or as 100% fruit juice. Average intake of total vegetables is below the range of recommended amounts, with nearly 90 percent of toddlers falling short of recommendations. About one-half of vegetables are consumed on their own, one-quarter are consumed as part of a mixed dish, and nearly 5 percent are consumed as savory snacks (e.g., potato chips).

Total grains, particularly refined grains, are consumed in amounts that exceed recommendations. Conversely, intakes of whole grains fall short of recommended amounts for more than 95 percent of toddlers. A majority of grains are consumed through breads, rolls, tortillas, or other bread products or as part of a mixed dish. Ten percent of grains come from sweet bakery products and approximately 15 percent come from crackers and savory snacks. Many of these categories are top sources of sodium or added sugars in this age group.

Average intakes of dairy foods, most of which is consumed as milk, generally exceed recommended amounts in this age group. Intakes of yogurt and cheese account for about 10 percent of dairy intakes. Plant-based beverages and flavored milks each make up about 2 percent of dairy intakes among toddlers.

Protein foods intakes fall within recommended range, on average. Intakes of meats, poultry, and eggs make up a majority of protein foods intakes, however seafood intakes in this age group is low. Children in this age group can reduce sodium intake by eating less cured or processed meats including hot dogs, deli meats, and sausages.

Due to the relatively high nutrient needs of toddlers, a healthy dietary pattern has virtually no room for added sugars. Toddlers consume an average of more than 100 calories from added sugars each day, ranging from 40 to 250 calories a day (about 2.5 to 16 teaspoons). Sugar-sweetened beverages, particularly fruit drinks, contribute more than 25 percent of total added sugars intakes and sweet bakery products contribute about 15 percent. Other food category sources contribute a smaller proportion of total added sugars on their own, but the wide variety of sources, which include yogurts, ready-to-eat cereals, candy, fruits, flavored milk, milk substitutes, baby food products, and breads, points to the need to make careful choices across all foods.

Vegetarian Dietary Pattern During the Second Year of Life

A Healthy Vegetarian Dietary Pattern for young children ages 12 through 23 months who are not fed human milk or infant formula is included in ***Appendix 3***. This pattern describes a lacto-ovo vegetarian diet that includes regular consumption of eggs, dairy products, soy products, and nuts or seeds, in addition to vegetables including beans, peas, and lentils, fruits, grains, and oils. Iron may be of particular concern because plant source foods contain only non-heme iron, which is less bioavailable than is heme iron. Food source lists for both heme and non-heme iron are available at **DietaryGuidelines.gov**. Vitamin B_{12} also may be of concern because it is present only in animal source foods. When feeding infants and toddlers a lacto-ovo vegetarian diet, parents, caregivers, and guardians should consult with a healthcare provider to determine whether supplementation of iron, vitamin B_{12}, and/or other nutrients is necessary and if so, appropriate levels to meet their unique needs.

Supporting Healthy Eating

Parents, guardians, and caregivers play an important role in nutrition during this life stage because infants and toddlers are fully reliant on them for their needs. In addition to "what" to feed children, "how" to feed young children also is critical. As noted above, repeated exposure to foods can increase acceptance of new foods. Another important concept is responsive feeding, a feeding style that emphasizes recognizing and responding to the hunger or fullness cues of an infant or young child (see "**Responsive Feeding**").

Responsive Feeding

Responsive feeding is a term used to describe a feeding style that emphasizes recognizing and responding to the hunger or fullness cues of an infant or young child. Responsive feeding helps young children learn how to self-regulate their intake.

See **Table 2-2** for some examples of signs a child may show for hunger and fullness when he or she is a newborn through age 5 months, and signs a child may start to show between age 6 through 23 months.

Table 2-2

Signs a Child is Hungry or Full

Birth Through Age 5 Months	
A child may be **hungry** if he or she: • Puts hands to mouth. • Turns head toward breast or bottle. • Puckers, smacks, or licks lips. • Has clenched hands.	A child may be **full** if he or she: • Closes mouth. • Turns head away from breast or bottle. • Relaxes hands.
Age 6 Through 23 Months	
A child may be **hungry** if he or she: • Reaches for or points to food. • Opens his or her mouth when offered a spoon or food. • Gets excited when he or she sees food. • Uses hand motions or makes sounds to let you know he or she is still hungry.	A child may be **full** if he or she: • Pushes food away. • Closes his or her mouth when food is offered. • Turns his or her head away from food. • Uses hand motions or makes sounds to let you know he or she is still full.

It is important to listen to the child's hunger and fullness cues to build healthy eating habits during this critical age. If parents, guardians, or caregivers have questions or concerns, a conversation with a healthcare provider will be helpful.

For more information on signs a child is hungry or full, see: **cdc.gov/nutritioninfantandtoddlernutrition/mealtime/signs-your-child-is-hungry-or-full.html**. More information on infant development skills, hunger and satiety cues, and typical daily portion sizes is available at **wicworks.fns.usda.gov/sites/default/files/media/document/Infant_Nutrition_and_Feeding_Guide.pdf**.

Accessing a Healthy Dietary Pattern

Many resources exist to support healthy growth and development during infancy and toddlerhood. These include the following Government programs that aim to support a healthy dietary pattern for infants and toddlers living in households with limited incomes:

- The **Special Supplemental Nutrition Program for Women, Infants, and Children (WIC)** supports infant and early childhood nutrition through supplementing the diets of women who are pregnant or lactating and by providing breastfeeding support and iron-fortified infant formula when human milk is unavailable or fed only partially. WIC accommodates the transition to solid foods by providing nutrient-dense foods in the supplemental food packages offered to older infants and toddlers. Nutrition education and counseling and referrals to healthcare and social services are other important resources offered to income-eligible WIC participants.

- The **Child and Adult Care Food Program (CACFP)** provides reimbursement for nutrient-dense meals and snacks served to infants and toddlers in participating child care centers, including at **Head Start** programs, and day care homes where infants and toddlers also have access to health screenings and families can be connected to health services to support their overall well-being.

- The **Supplemental Nutrition Assistance Program (SNAP)** is the largest food assistance program in the United States. SNAP helps meet the nutritional needs of infants and toddlers living in low-income households by providing temporary monthly benefits that can be used to access a healthy dietary pattern.

These Government nutrition programs are especially important for the 14 percent[3] of families with children who experience food insecurity and may struggle to access the foods needed to support a healthy dietary pattern. Professionals can use these, and additional Government and non-Government resources that exist within communities, to support healthy eating during infancy and toddlerhood.

Looking Toward Chapter 3: Children and Adolescents

This chapter focused on nutrition issues important to infants and toddlers—exclusive human milk feeding, if possible; introducing nutrient-dense complementary foods at about age 6 months; and encouraging infants and toddlers to sample and consume a variety of nutrient-dense foods and beverages to meet their needs. As toddlers grow and their dietary patterns become more integrated with the family's food patterns, new issues arise. These issues, and how to accommodate them within a lifelong healthy dietary pattern, are discussed in the next chapter, which focuses on children and adolescents.

[3] More information on food insecurity is available at **ers.usda.gov/data-products/ag-and-food-statistics-charting-the-essentials/food-security-and-nutrition-assistance**.

AGES 2-18

CHAPTER 3

Children and Adolescents

Introduction

Children and adolescents include individuals ages 2 through 18—a life stage characterized by transitions and the formation of dietary patterns. Suboptimal current intake patterns among children and adolescents and inadequate physical activity contribute to overweight and obesity in this life stage and risk of chronic disease (e.g., type 2 diabetes, cardiovascular disease) later in life. Changing this trajectory is crucial because dietary patterns established during this life stage tend to continue into adult years.

Healthy eating throughout this life stage involves the child or adolescent, families and caregivers, and institutions and settings where food is provided and consumed. Young children are fully reliant on others to provide their meals and snacks. As children transition to school-age and through adolescence, they are exposed to new food choices and begin to have more autonomy in the foods that are selected. New influences on eating behavior also emerge, such as peer pressure, which can create opportunities or challenges for establishing dietary patterns consistent with health and longevity. Adolescents acquire ever-greater independence in their food choices as they mature, with more time spent on their own with peers and more foods and beverages frequently consumed in social settings. Other factors that influence eating behavior include social supports, exposure to food marketing and promotion, and policies that determine community design.

Youth have diverse calorie and nutrient needs based on age and patterns of growth, development, and physical activity. Current intake data of young children show some components of a healthy dietary pattern that continue from the infant and toddler life stages. Before these components of a healthy dietary pattern are established, however, diet quality worsens through childhood and into adolescence and intake patterns drift further from recommendations in the *Dietary Guidelines*. Active community support is needed to help youth meet food group and nutrient goals with nutrient-dense foods and beverages.

Childhood Overweight and Obesity

In the United States, 41 percent of children and adolescents are overweight or have obesity, and the prevalence is higher among Hispanic and non-Hispanic Black children and adolescents as compared to non-Hispanic Asians and Whites. Overweight and obesity put youth at high risk of serious health concerns. Youth with obesity are more likely to have immediate health risks, including high blood pressure, high cholesterol, and impaired glucose tolerance. They also are at increased risk of cardiovascular disease and type 2 diabetes beginning as soon as the teenage years and into adulthood. Psychological (e.g., anxiety, depression) and social concerns (e.g., bullying, stigma) also are more likely in children and adolescents with overweight or obesity.

The causes of childhood obesity are complex and interconnected. Behaviors (e.g., eating habits, level of physical activity, sedentary time) and the community in which a child or adolescent resides can influence risk of obesity. Genetics and the fetal environment also play a role in the development of obesity. However, many opportunities exist to help prevent or manage overweight and obesity as children transition through these life stages. The goal for children and adolescents with overweight or obesity is to reduce the rate of weight gain while allowing normal growth and development. This can primarily be done by emphasizing nutrient-dense food and beverage choices, minimizing calories from sources that do not contribute to a healthy dietary pattern, and encouraging regular physical activity.

Healthy Dietary Patterns

Children and adolescents are encouraged to follow the recommendations on the types of foods and beverages that make up a healthy dietary pattern described in ***Chapter 1. Nutrition and Health Across the Lifespan: The Guidelines and Key Recommendations***. **Tables 3-1** to **3-3** display the Healthy U.S.-Style Dietary Pattern to illustrate the specific amounts and limits for food groups and other dietary components that make up healthy dietary patterns at the calorie levels appropriate for most children and adolescents across four age ranges: one table combining patterns relevant for ages 2 through 4 and ages 5 through 8, and single tables for ages 9 through 13 and for ages 14 through 18. **Tables 3-1** to **3-3** also show the calories remaining for other uses—about 10-15 percent of the total available—after meeting food group and nutrient goals through the selection of nutrient-dense foods and beverages.

Calorie needs generally increase throughout this life stage to support growth and development. Child and adolescent females generally have lower calorie needs than do males, with variations based on size and level of physical activity. During adolescence, the range of calorie intakes widens to support diverse growth trajectories. More information on the calorie estimates is provided in **Tables 3-1** to **3-3** (see **footnote a**) and in ***Appendix 2. Estimated Calorie Needs***.

The USDA Dietary Patterns, including the Healthy U.S.-Style Dietary Pattern, provide a framework to help children and adolescents follow a healthy dietary pattern and meet the Guidelines and their Key Recommendations. The USDA Foods Patterns can be customized based on dietary needs, personal preferences, and budgetary constraints. A variety of nutrient-dense foods and beverages can be selected across the food group and subgroups as part of an overall healthy dietary pattern. For more information about the USDA Food Patterns, see ***Chapter 1*** and ***Appendix 3. USDA Dietary Patterns***. For this age group, as for all the others, a figure comparing current intakes to recommendations is presented. See "**Current Intakes**" for more information.

Children Ages 2 Through 8

In early childhood (ages 2 through 4), females require about 1,000 to 1,400 calories per day and males require about 1,000 to 1,600 calories per day. With the transition to school-age (ages 5 through 8), females require about 1,200 to 1,800 calories per day and males require about 1,200 to 2,000 calories per day.

Physical Activity

Childhood and adolescence is a critical period for developing movement skills, learning healthy habits, and establishing a firm foundation for lifelong health and well-being. For youth, regular physical activity can improve bone health, cardiorespiratory and muscular fitness, and cognition (including academic achievement), and reduce the symptoms of depression.

Preschool-aged children should be active throughout the day to enhance growth and development. Adults caring for children during this age should encourage active play that includes a variety of activity types (light, moderate, or vigorous intensity) and aim for at least 3 hours per day.

School-aged children and adolescents need at least 60 minutes of moderate-to-vigorous activity daily to attain the most health benefits from physical activity. Most activity can be aerobic, like walking, running, or anything that makes their heart beat faster. They also need muscle-strengthening and bone-strengthening activities that make their muscles and bones strong, like climbing on playground equipment, playing basketball, and jumping rope.

The U.S. Department of Health and Human Service's ***Physical Activity Guidelines for Americans*** and related Move Your Way® resources have more information about the benefits of physical activity and tips on how to get started. Available at **health.gov/paguidelines**.

Nutrient-Dense Foods and Beverages

Nutrient-dense foods and beverages provide vitamins, minerals, and other health-promoting components and have little added sugars, saturated fat, and sodium. Vegetables, fruits, whole grains, seafood, eggs, beans, peas, and lentils, unsalted nuts and seeds, fat-free and low-fat dairy products, and lean meats and poultry—when prepared with no or little added sugars, saturated fat, and sodium—are nutrient-dense foods.

Table 3-1

Healthy U.S.-Style Dietary Pattern for Children Ages 2 Through 8, With Daily or Weekly Amounts From Food Groups, Subgroups, and Components

CALORIE LEVEL OF PATTERN[a]	1,000	1,200	1,400	1,600	1,800	2,000
FOOD GROUP OR SUBGROUP[b]	**Daily Amount of Food From Each Group** (Vegetable and protein foods subgroup amounts are per week.)					
Vegetables (cup eq/day)	**1**	**1 ½**	**1 ½**	**2**	**2 ½**	**2 ½**
	Vegetable Subgroups in Weekly Amounts					
Dark-Green Vegetables (cup eq/wk)	½	1	1	1 ½	1 ½	1 ½
Red and Orange Vegetables (cup eq/wk)	2 ½	3	3	4	5 ½	5 ½
Beans, Peas, Lentils (cup eq/wk)	½	½	½	1	1 ½	1 ½
Starchy Vegetables (cup eq/wk)	2	3 ½	3 ½	4	5	5
Other Vegetables (cup eq/wk)	1 ½	2 ½	2 ½	3 ½	4	4
Fruits (cup eq/day)	**1**	**1**	**1 ½**	**1 ½**	**1 ½**	**2**
Grains (ounce eq/day)	**3**	**4**	**5**	**5**	**6**	**6**
Whole Grains (ounce eq/day)	1 ½	2	2 ½	3	3	3
Refined Grains (ounce eq/day)	1 ½	2	2 ½	2	3	3
Dairy (cup eq/day)	**2**	**2 ½**	**2 ½**	**2 ½**	**2 ½**	**2 ½**
Protein Foods (ounce eq/day)	**2**	**3**	**4**	**5**	**5**	**5 ½**
	Protein Foods Subgroups in Weekly Amounts					
Meats, Poultry, Eggs (ounce eq/wk)	10	14	19	23	23	26
Seafood (ounce eq/wk)[c]	2-3[d]	4	6	8	8	8
Nuts, Seeds, Soy Products (ounce eq/wk)	2	2	3	4	4	5
Oils (grams/day)	**15**	**17**	**17**	**22**	**22**	**24**
Limit on Calories for Other Uses (kcal/day)[e]	**130**	**80**	**90**	**150**	**190**	**280**
Limit on Calories for Other Uses (%/day)	13%	7%	6%	9%	10%	14%

[a] Calorie level ranges: Ages 2 through 4, Females: 1,000-1,400 calories; Males: 1,000-1,600 calories. Ages 5 through 8, Females: 1,200-1,800 calories; Males: 1,200-2,000 calories. Energy levels are calculated based on reference height (median) and reference weight (healthy) corresponding with a healthy body mass index (BMI). Calorie needs vary based on many factors. The DRI Calculator for Healthcare Professionals, available at **nal.usda.gov/fnic/dri-calculator**, can be used to estimate calorie needs based on age, sex, height, weight, and activity level.

[b] Definitions for each food group and subgroup and quantity (i.e., cup or ounce equivalents) are provided in ***Chapter 1*** and are compiled in ***Appendix 3***.

[c] The U.S. Food and Drug Administration (FDA) and the U.S. Environmental Protection Agency (EPA) provide joint advice regarding seafood consumption to limit methylmercury exposure for children. Depending on body weight, some children should choose seafood lowest in methylmercury or eat less seafood than the amounts in the Healthy US-Style Dietary Pattern. More information is available on the FDA and EPA websites at **FDA.gov/fishadvice** and **EPA.gov/fishadvice**.

[d] **If consuming up to 2 ounces of seafood per week**, children should only be fed cooked varieties from the “Best Choices” list in the FDA/EPA joint “Advice About Eating Fish,” available at **FDA.gov/fishadvice** and **EPA.gov/fishadvice**. **If consuming up to 3 ounces of seafood per week**, children should only be fed cooked varieties from the “Best Choices” list that contain even lower methylmercury: flatfish (e.g., flounder), salmon, tilapia, shrimp, catfish, crab, trout, haddock, oysters, sardines, squid, pollock, anchovies, crawfish, mullet, scallops, whiting, clams, shad, and Atlantic mackerel. If consuming up to 3 ounces of seafood per week, many commonly consumed varieties of seafood should be avoided because they cannot be consumed at 3 ounces per week by children without the potential of exceeding safe methylmercury limits; examples that should not be consumed include: canned light tuna or white (albacore) tuna, cod, perch, black sea bass. For a complete list please see: **FDA.gov/fishadvice** and **EPA.gov/fishadvice**.

[e] Foods are assumed to be in nutrient-dense forms; lean or low-fat; and prepared with minimal added sugars, refined starches, saturated fat, or sodium. If all food choices to meet food group recommendations are in nutrient-dense forms, a small number of calories remain within the overall limit of the pattern (i.e., limit on calories for other uses). The number of calories depends on the total calorie level of the pattern and the amounts of food from each food group required to meet nutritional goals. Calories up to the specified limit can be used for added sugars and/or saturated fat, or to eat more than the recommended amount of food in a food group.

NOTE: The total dietary pattern should not exceed *Dietary Guidelines* limits for added sugars and saturated fat; be within the Acceptable Macronutrient Distribution Ranges for protein, carbohydrate, and total fats; and stay within calorie limits. Values are rounded. See ***Appendix 3*** for all calorie levels of the pattern.

Current Intakes

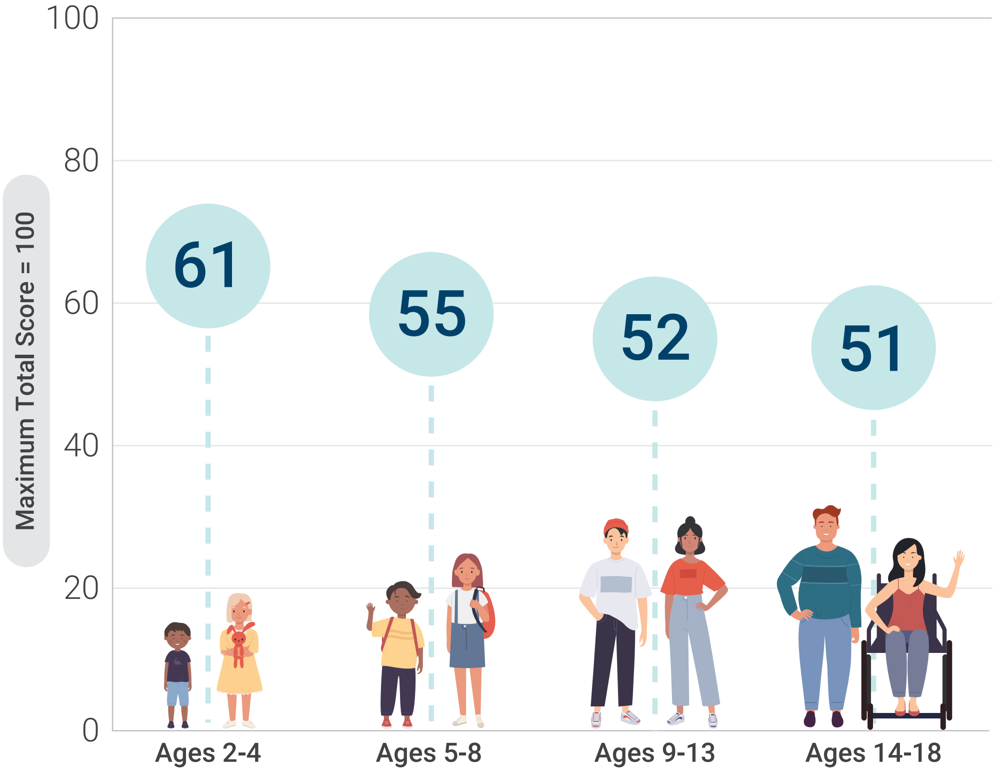
Figures 3-2 to **3-9** highlight the dietary intakes of children and adolescents, including the Healthy Eating Index-2015 score, which is an overall measure of how intakes align with the *Dietary Guidelines*, as well as information on the components of a healthy diet—specifically, the food groups. **Figures 3-1**, **3-3**, **3-5**, and **3-7** display the average intakes of the food groups compared to the range of recommended intakes at the calorie levels most relevant to males and females in these age groups. Additionally, the percent of children and adolescents exceeding the recommended limits for added sugars, saturated fat, and sodium are shown, along with average intakes of these components. Average intakes compared to recommended intake ranges of the subgroups for grains are represented in daily amounts; subgroups for vegetables and protein foods are represented in weekly amounts (see **Figures 3-2**, **3-4**, **3-6**, and **3-8**).

Current intakes show that from an early age, dietary patterns are not aligned with the *Dietary Guidelines*. The Healthy Eating Index score of 61 out of 100 for children ages 2 through 4 indicates that overall diet quality is poor. Notably, HEI Scores decline throughout childhood and adolescence, with scores for adolescents approximately 10 points lower than those for young children (**Figure 3-1**).

Among children ages 2 through 4, consumption of total fruit is generally adequate for about 60 percent of children. Compared to other age groups, a higher percentage of young children also have intakes of total vegetables at or above recommended levels. The difference between recommended and actual intakes of total fruit and total vegetables emerges and expands as children age. By late adolescence, average fruit and vegetable consumption is about half of the recommended range of intake. Throughout youth, starchy vegetables (e.g., white potatoes, corn)—often in forms that are fried or prepared with additions such as butter and salt—are more frequently consumed than the red and orange; dark green; or beans, peas, and lentils vegetable subgroups. For fruit, about 70 percent of intake comes from whole forms—fresh, canned, frozen, or dried—and 100% juice, which are often nutrient-dense forms. Some fruit is consumed through sources that are not nutrient-dense; for example, fruit as part of a baked dessert or juice drink.

Figure 3-1

Healthy Eating Index Scores Across Childhood and Adolescence



Data Source: Analysis of What We Eat in America, NHANES 2015-2016, ages 2 through 18, day 1 dietary intake, weighted.

The amount of dairy foods consumed by children and adolescents is relatively stable across age groups. Beginning at age 9 the amount of dairy foods in a healthy dietary pattern increases from 2 ½ to 3 cup equivalents per day to support an increase in calcium intake that is needed during these life stages. As a result, average intake of dairy foods is close to or at recommended levels for children younger than age 9 while consumption among adolescents is typically below recommended intake levels.

Although the gaps between recommended and current intakes widen throughout these life stages for some dietary components, others, principally whole grains and seafood, are infrequently consumed by any youth. Whole grains are consumed below recommended levels even by young children. As the difference between recommended and current intakes widens across age groups, the types of refined and whole-grain foods consumed remains consistent. Mixed dishes, such as pizza, pasta, sandwiches, burgers, and tacos, contribute about 50 percent of total grains intake, and snacks and sweets, such as chips, crackers, and cookies, about 20 percent. Breakfast cereals and bars, including ready-to-eat and cooked varieties, are the top contributor to whole-grains intake during these life stages. Despite the underconsumption of whole grains, intakes of total grains trend toward overconsumption due to the contribution of refined grains.

Total protein intake generally meets targets except for adolescent females ages 14 through 18. Youth typically meet or exceed recommendations for meats, poultry, and eggs. Seafood, a protein subgroup that can support intakes of beneficial fatty acids, is consumed at levels far below the lower end of the recommended intakes range. When seafood is consumed, it is typically as part of a mixed dish rather than as an individual food item.

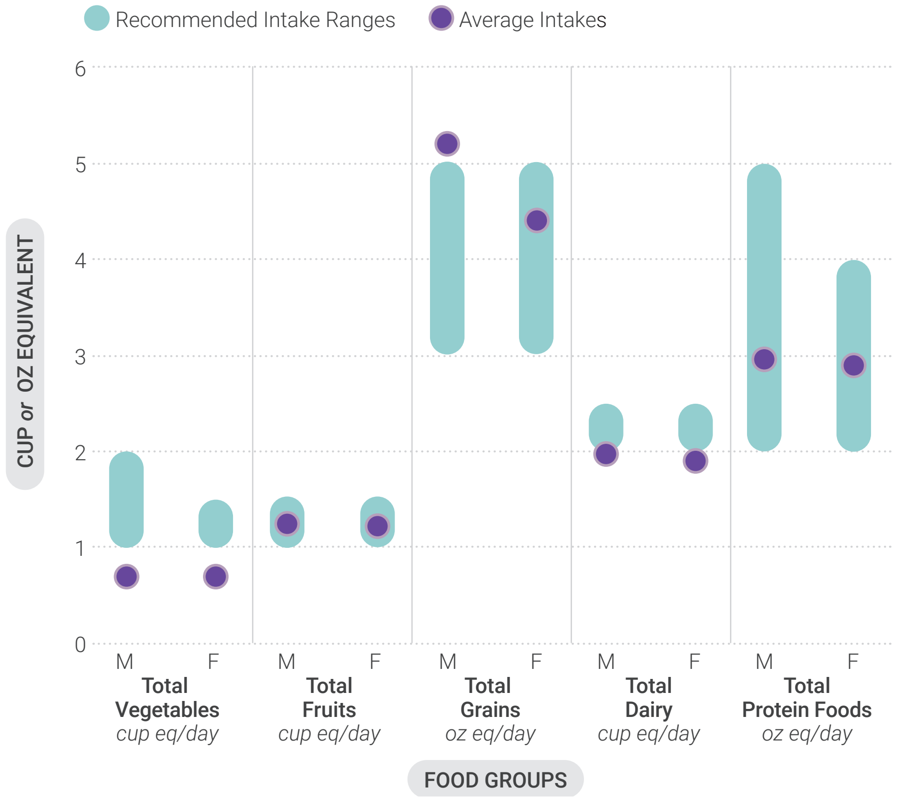
Children and adolescents can improve intake patterns by maintaining the components of a healthy diet that are evident in early childhood, particularly total fruit and dairy foods, while increasing consumption of food groups that are underconsumed across all age groups, specifically total vegetables and vegetable subgroups, whole grains, and seafood. Reducing intakes of added sugars, saturated fat, and sodium—components of a dietary pattern that are often consumed above recommended limits beginning at an early age—also will support youth in achieving a healthy dietary pattern, particularly when considering the very limited amount of calories available outside of those needed for meeting food group and nutrient goals.

Current Intakes

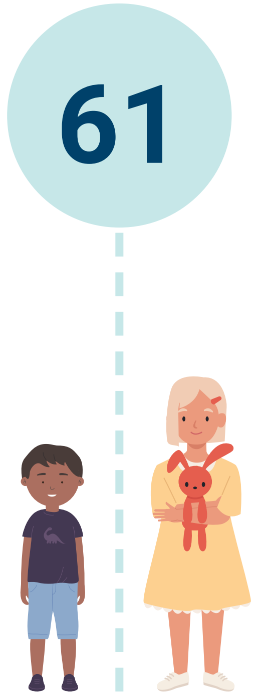
Figure 3-2

Current Intakes: Ages 2 Through 4

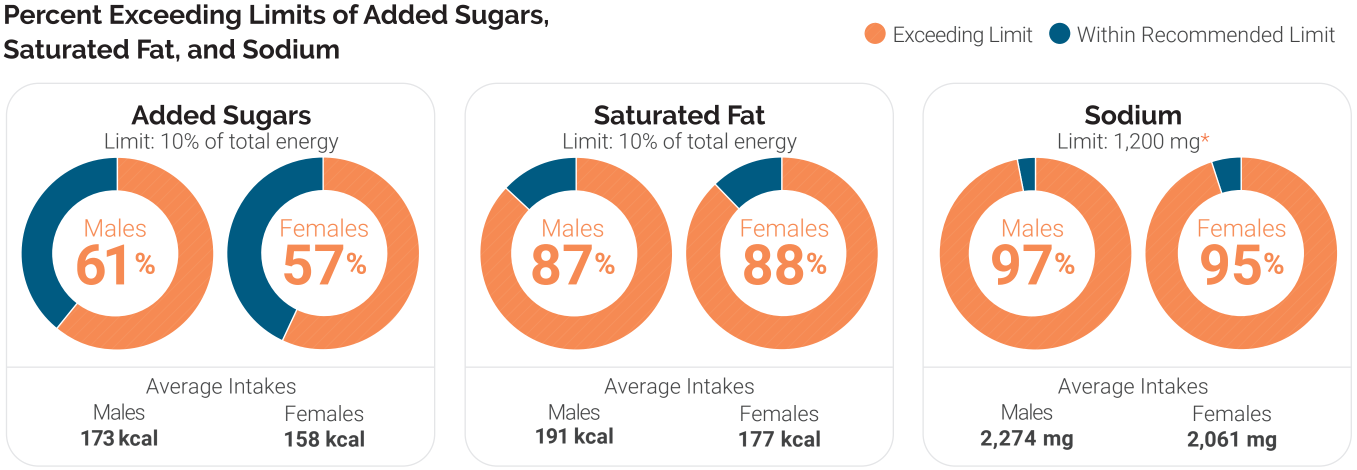
Average Daily Food Group Intakes Compared to Recommended Intake Ranges



Healthy Eating Index Score (on a scale of 0-100)



Percent Exceeding Limits of Added Sugars, Saturated Fat, and Sodium

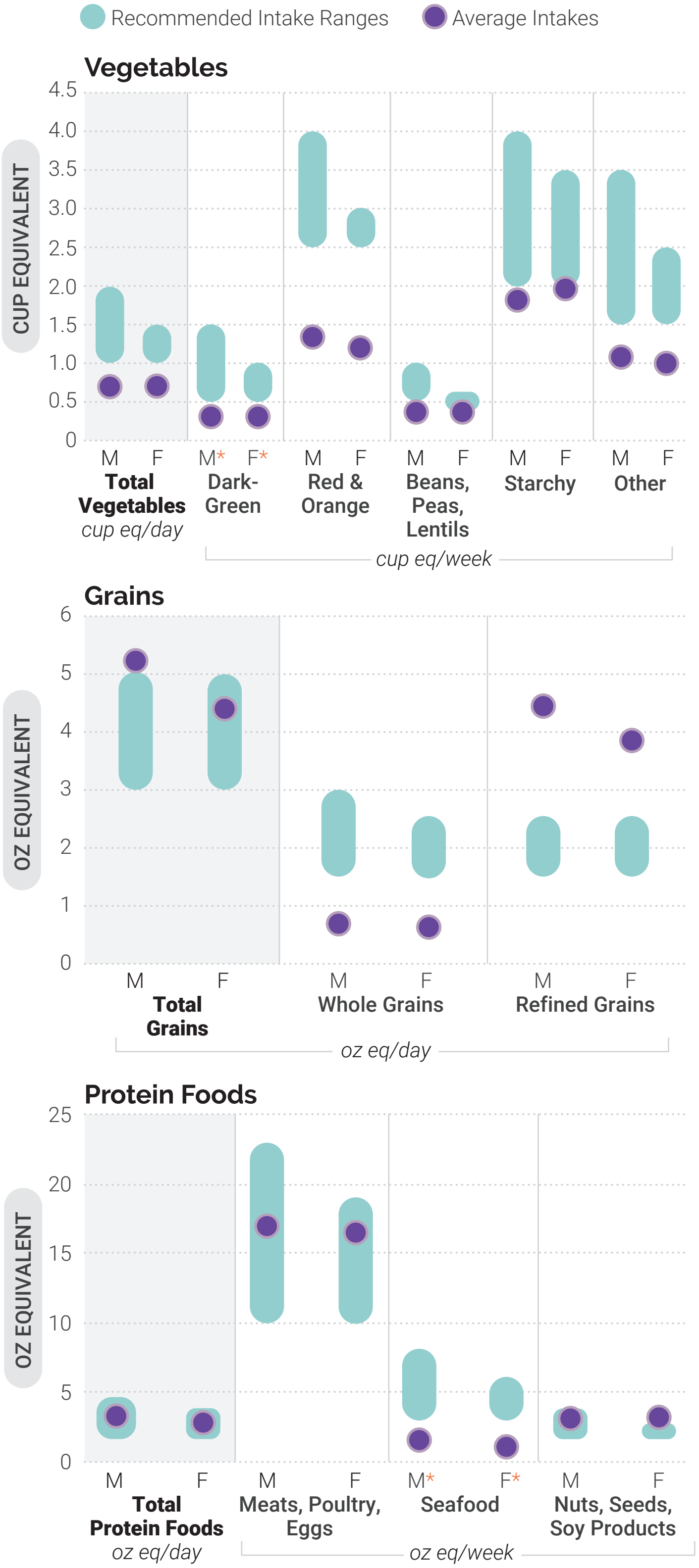


***NOTE:** Children ages 2 through 3 should reduce sodium intake if above 1,200 mg/d and those age 4 should reduce intake if above 1,500 mg/d.

Data Sources: *Average Intakes and HEI-2015 Scores:* Analysis of What We Eat in America, NHANES 2015-2016, day 1 dietary intake data, weighted. *Recommended Intake Ranges:* Healthy U.S.-Style Dietary Patterns (see ***Appendix 3***). *Percent Exceeding Limits:* What We Eat in America, NHANES 2013-2016, 2 days dietary intake data, weighted.

Figure 3-3

Average Intakes of Subgroups Compared to Recommended Intake Ranges: Ages 2 Through 4



*__NOTE:__ Estimates may be less precise than others due to small sample size and/or large relative standard error.

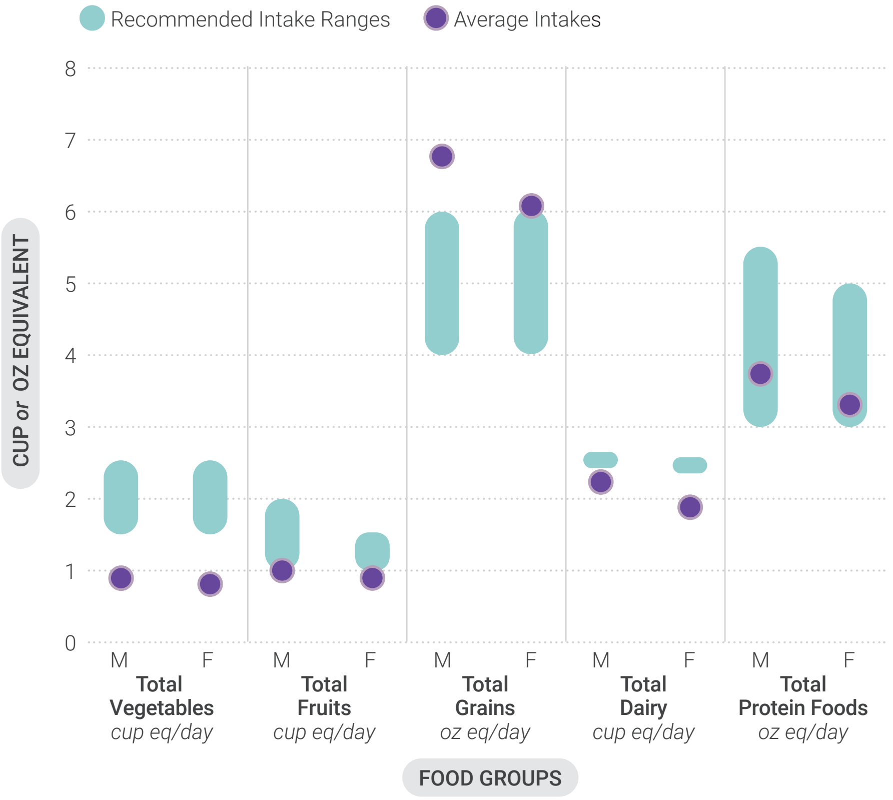
Data Sources: *Average Intakes:* Analysis of What We Eat in America, NHANES 2015-2016, day 1 dietary intake data, weighted. *Recommended Intake Ranges:* Healthy U.S.-Style Dietary Patterns (see ***Appendix 3***).

Current Intakes

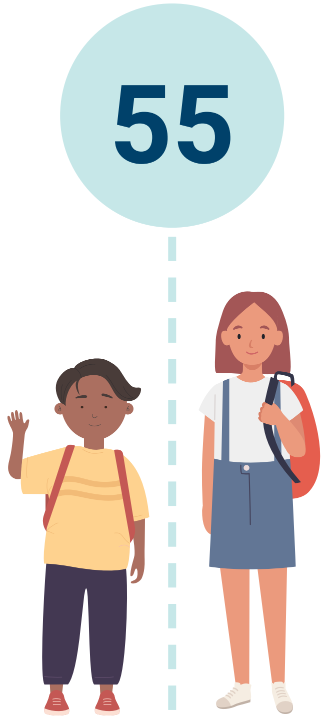
Figure 3-4

Current Intakes: Ages 5 Through 8

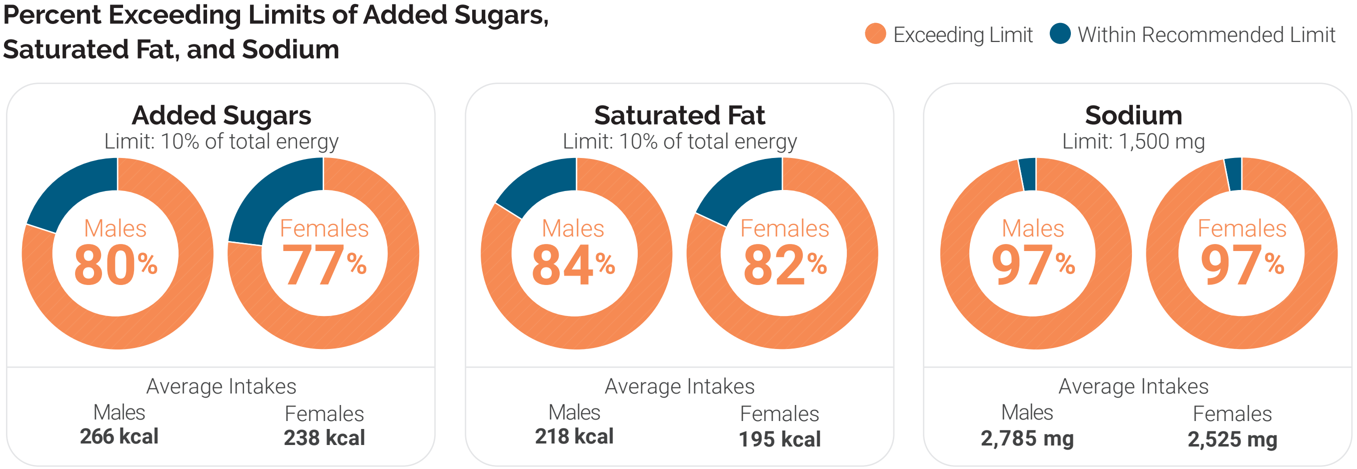
Average Daily Food Group Intakes Compared to Recommended Intake Ranges



Healthy Eating Index Score (on a scale of 0-100)



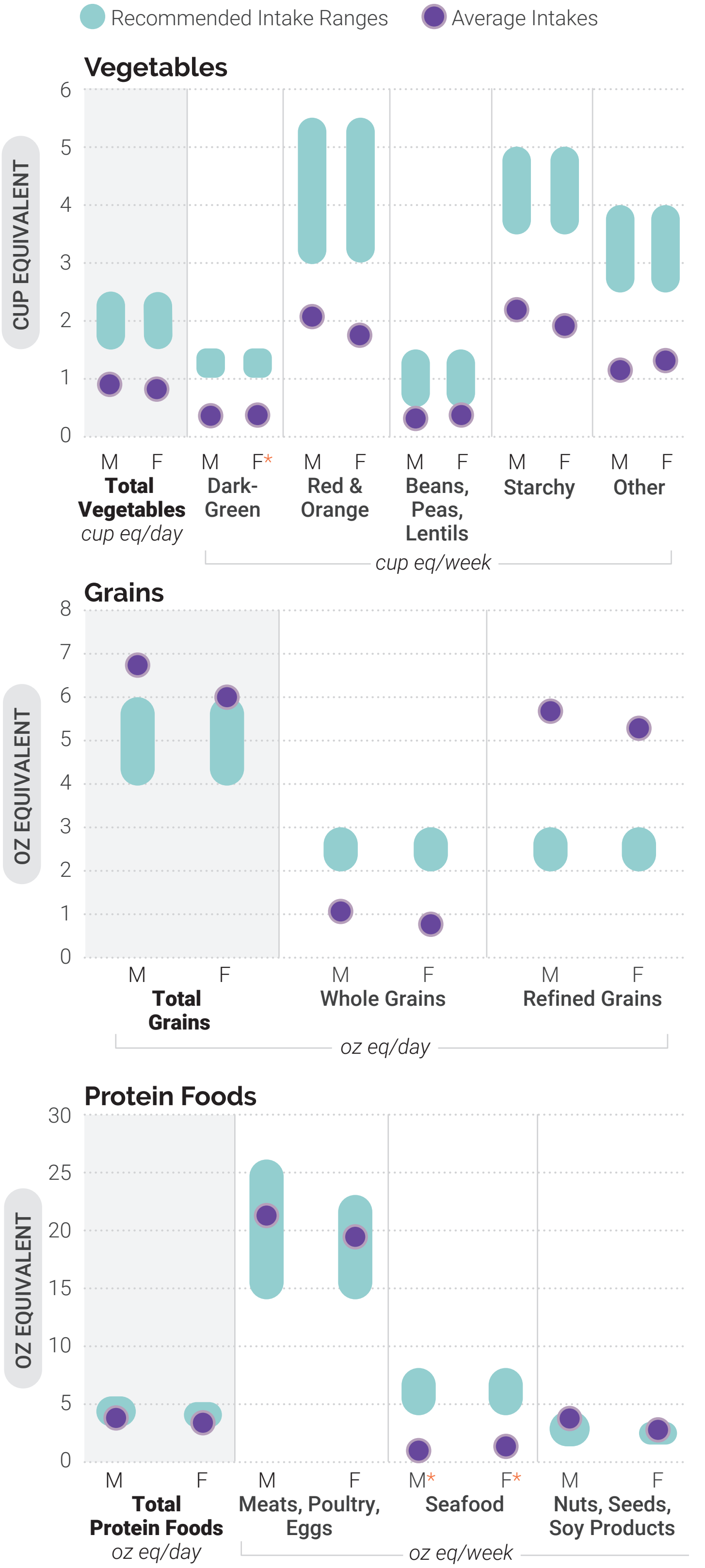
Percent Exceeding Limits of Added Sugars, Saturated Fat, and Sodium



Data Sources: *Average Intakes and HEI-2015 Scores:* Analysis of What We Eat in America, NHANES 2015-2016, day 1 dietary intake data, weighted. Recommended Intake Ranges: Healthy U.S.-Style Dietary Patterns (see ***Appendix 3***). *Percent Exceeding Limits:* What We Eat in America, NHANES 2013-2016, 2 days dietary intake data, weighted.

Figure 3-5

Average Intakes of Subgroups Compared to Recommended Intake Ranges: Ages 5 Through 8



***NOTE:** Estimates may be less precise than others due to small sample size and/or large relative standard error.

Data Sources: *Average Intake:* Analysis of What We Eat in America, NHANES 2015-2016, day 1 dietary intake data, weighted. *Recommended Intake Ranges:* Healthy U.S.-Style Dietary Patterns (see ***Appendix 3***).

Children and Adolescents Ages 9 Through 13

In the late childhood and early adolescence stage, females require about 1,400 to 2,200 calories per day and males require about 1,600 to 2,600 calories per day.

Table 3-2

Healthy U.S.-Style Dietary Pattern for Children and Adolescents Ages 9 Through 13, With Daily or Weekly Amounts From Food Groups, Subgroups, and Components

CALORIE LEVEL OF PATTERN[a]	1,400	1,600	1,800	2,000	2,200	2,400	2,600
FOOD GROUP OR SUBGROUP[b]	**Daily Amount of Food From Each Group** (Vegetable and protein foods subgroup amounts are per week.)						
Vegetables (cup eq/day)	**1 ½**	**2**	**2 ½**	**2 ½**	**3**	**3**	**3 ½**
	Vegetable Subgroups in Weekly Amounts						
Dark-Green Vegetables (cup eq/wk)	1	1 ½	1 ½	1 ½	2	2	2 ½
Red & Orange Vegetables (cup eq/wk)	3	4	5 ½	5 ½	6	6	7
Beans, Peas, Lentils (cup eq/wk)	½	1	1 ½	1 ½	2	2	2 ½
Starchy Vegetables (cup eq/wk)	3 ½	4	5	5	6	6	7
Other Vegetables (cup eq/wk)	2 ½	3 ½	4	4	5	5	5 ½
Fruits (cup eq/day)	**1 ½**	**1 ½**	**1 ½**	**2**	**2**	**2**	**2**
Grains (ounce eq/day)	**5**	**5**	**6**	**6**	**7**	**8**	**9**
Whole Grains (ounce eq/day)	2 ½	3	3	3	3 ½	4	4 ½
Refined Grains (ounce eq/day)	2 ½	2	3	3	3 ½	4	4 ½
Dairy (cup eq/day)	**3**	**3**	**3**	**3**	**3**	**3**	**3**
Protein Foods (ounce eq/day)	**4**	**5**	**5**	**5 ½**	**6**	**6 ½**	**6 ½**
	Protein Foods Subgroups in Weekly Amounts						
Meats, Poultry, Eggs (ounce eq/wk)	19	23	23	26	28	31	31
Seafood (ounce eq/wk)[c]	6	8	8	8	9	10	10
Nuts, Seeds, Soy Products (ounce eq/wk)	3	4	4	5	5	5	5
Oils (grams/day)	**17**	**22**	**24**	**27**	**29**	**31**	**34**
Limit on Calories for Other Uses (kcal/day)[d]	**50**	**100**	**140**	**240**	**250**	**320**	**350**
Limit on Calories for Other Uses (%/day)	4%	6%	8%	12%	11%	13%	13%

[a] Calorie level ranges: Females: 1,400-2,200; Males: 1,600-2,600. Energy levels are calculated based on reference height (median) and reference weight (healthy) corresponding with a healthy body mass index (BMI). Calorie needs vary based on many factors. The DRI Calculator for Healthcare Professionals, available at **nal.usda.gov/fnic/dri-calculator**, can be used to estimate calorie needs based on age, sex, height, weight, and activity level.

[b] Definitions for each food group and subgroup and quantity (i.e., cup or ounce equivalents) are provided in ***Chapter 1*** and are compiled in ***Appendix 3***.

[c] The U.S. Food and Drug Administration (FDA) and the U.S. Environmental Protection Agency (EPA) provide joint advice regarding seafood consumption to limit methylmercury exposure for children. Depending on body weight, some children should choose seafood lowest in methylmercury or eat less seafood than the amounts in the Healthy US-Style Dietary Pattern. More information is available on the FDA and EPA websites at **FDA.gov/fishadvice** and **EPA.gov/fishadvice**.

[d] All foods are assumed to be in nutrient-dense forms; lean or low-fat; and prepared with minimal added sugars, saturated fat, refined starches, or sodium. If all food choices to meet food group recommendations are in nutrient-dense forms, a small number of calories remain within the overall limit of the pattern (i.e., limit on calories for other uses). The number of calories depends on the total calorie level of the pattern and the amounts of food from each food group required to meet nutritional goals. Calories up to the specified limit can be used for added sugars and/or saturated fat, or to eat more than the recommended amount of food in a food group.

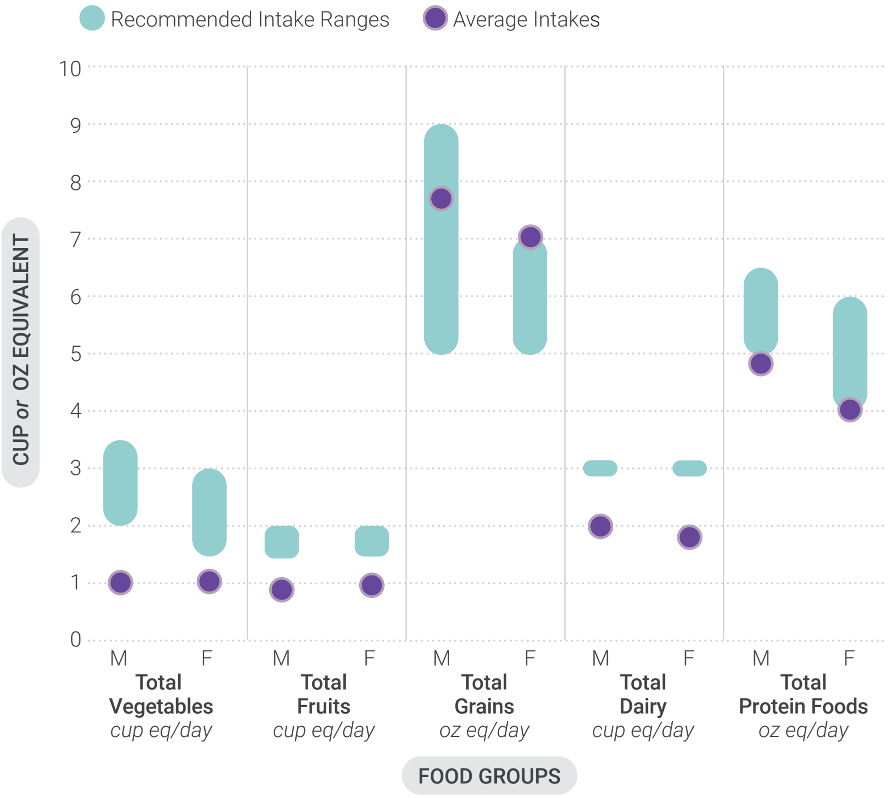
NOTE: The total dietary pattern should not exceed *Dietary Guidelines* limits for added sugars and saturated fat; be within the Acceptable Macronutrient Distribution Ranges for protein, carbohydrate, and total fats; and stay within calorie limits. Values are rounded. See ***Appendix 3*** for all calorie levels of the pattern.

Current Intakes

Figure 3-6

Current Intakes: Ages 9 Through 13

Average Daily Food Group Intakes Compared to Recommended Intake Ranges



Healthy Eating Index Score (on a scale of 0-100)

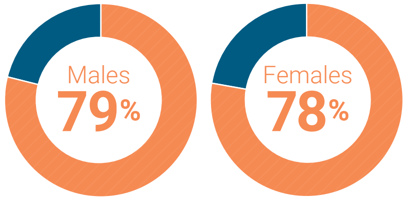
52

Percent Exceeding Limits of Added Sugars, Saturated Fat, and Sodium

● Exceeding Limit ● Within Recommended Limit

Added Sugars

Limit: 10% of total energy

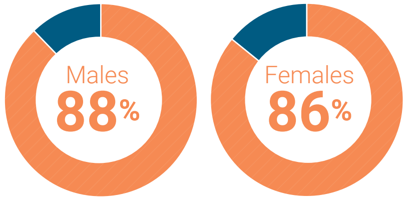


Average Intakes

Males	Females
322 kcal	**264 kcal**

Saturated Fat

Limit: 10% of total energy

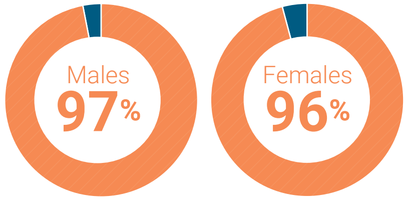


Average Intakes

Males	Females
259 kcal	**229 kcal**

Sodium

Limit: 1,800 mg



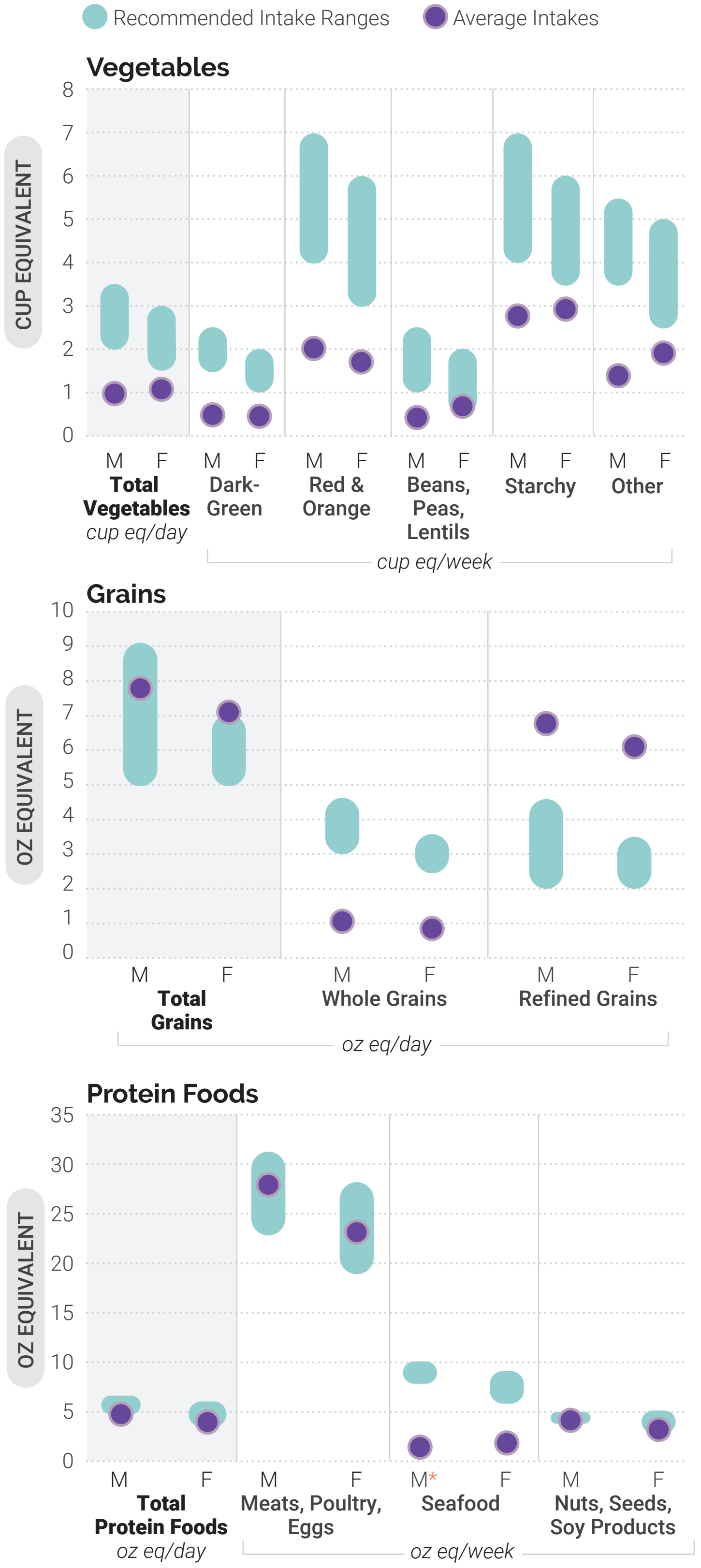
Average Intakes

Males	Females
3,451 mg	**3,030 mg**

Data Sources: *Average Intake and HEI-2015 Scores:* Analysis of What We Eat in America, NHANES 2015-2016, day 1 dietary intake data, weighted. *Recommended Intake Ranges:* Healthy U.S.-Style Dietary Patterns (see ***Appendix 3***). *Percent Exceeding Limits:* What We Eat in America, NHANES 2013-2016, 2 days dietary intake data, weighted.

Figure 3-7

Average Intakes of Subgroups Compared to Recommended Intake Ranges: Ages 9 Through 13



***NOTE:** Estimates may be less precise than others due to small sample size and/or large relative standard error.

Data Sources: *Average Intakes:* Analysis of What We Eat in America, NHANES 2015-2016, day 1 dietary intake data, weighted. *Recommended Intake Ranges:* Healthy U.S.-Style Dietary Patterns (see ***Appendix 3***).

Adolescents Ages 14 Through 18

Adolescent females require about 1,800 to 2,400 calories per day and males require about 2,000 to 3,200 calories per day.

Table 3-3

Healthy U.S.-Style Dietary Pattern for Adolescents Ages 14 Through 18, With Daily or Weekly Amounts From Food Groups, Subgroups, and Components

CALORIE LEVEL OF PATTERN[a]	1,800	2,000	2,200	2,400	2,600	2,800	3,000	3,200
FOOD GROUP OR SUBGROUP[b]	**Daily Amount of Food From Each Group** (Vegetable and protein foods subgroup amounts are per week.)							
Vegetables (cup eq/day)	**2 ½**	**2 ½**	**3**	**3**	**3 ½**	**3 ½**	**4**	**4**
	Vegetable Subgroups in Weekly Amounts							
Dark-Green Vegetables (cup eq/wk)	1 ½	1 ½	2	2	2 ½	2 ½	2 ½	2 ½
Red and Orange Vegetables (cup eq/wk)	5 ½	5 ½	6	6	7	7	7 ½	7 ½
Beans, Peas, Lentils (cup eq/wk)	1 ½	1 ½	2	2	2 ½	2 ½	3	3
Starchy Vegetables (cup eq/wk)	5	5	6	6	7	7	8	8
Other Vegetables (cup eq/wk)	4	4	5	5	5 ½	5 ½	7	7
Fruits (cup eq/day)	**1 ½**	**2**	**2**	**2**	**2**	**2 ½**	**2 ½**	**2 ½**
Grains (ounce eq/day)	**6**	**6**	**7**	**8**	**9**	**10**	**10**	**10**
Whole Grains (ounce eq/day)	3	3	3 ½	4	4 ½	5	5	5
Refined Grains (ounce eq/day)	3	3	3 ½	4	4 ½	5	5	5
Dairy (cup eq/day)	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**
Protein Foods (ounce eq/day)	**5**	**5 ½**	**6**	**6 ½**	**6 ½**	**7**	**7**	**7**
	Protein Foods Subgroups in Weekly Amounts							
Meats, Poultry, Eggs (ounce eq/wk)	23	26	28	31	31	33	33	33
Seafood (ounce eq/wk)	8	8	9	10	10	10	10	10
Nuts, Seeds, Soy Products (ounce eq/wk)	4	5	5	5	5	6	6	6
Oils (grams/day)	**24**	**27**	**29**	**31**	**34**	**36**	**44**	**51**
Limit on Calories for Other Uses (kcal/day)[c]	**140**	**240**	**250**	**320**	**350**	**370**	**440**	**580**
Limit on Calories for Other Uses (%/day)	8%	12%	11%	13%	13%	13%	15%	18%

[a] Calorie level ranges: Females: 1,800-2,400 calories; Males: 2,000-3,200 calories. Energy levels are calculated based on reference height (median) and reference weight (healthy) corresponding with a healthy body mass index (BMI). Calorie needs vary based on many factors. The DRI Calculator for Healthcare Professionals, available at **nal.usda.gov/fnic/dri-calculator**, can be used to estimate calorie needs based on age, sex, height, weight, activity level.

[b] Definitions for each food group and subgroup and quantity (i.e., cup or ounce equivalents) are provided in ***Chapter 1*** and are compiled in ***Appendix 3***.

[c] All foods are assumed to be in nutrient-dense forms; lean or low-fat; and prepared with minimal added sugars, saturated fat, refined starches, or sodium. If all food choices to meet food group recommendations are in nutrient-dense forms, a small number of calories remain within the overall limit of the pattern (i.e., limit on calories for other uses). The number of calories depends on the total calorie level of the pattern and the amounts of food from each food group required to meet nutritional goals. Calories up to the specified limit can be used for added sugars and/or saturated fat, or to eat more than the recommended amount of food in a food group.

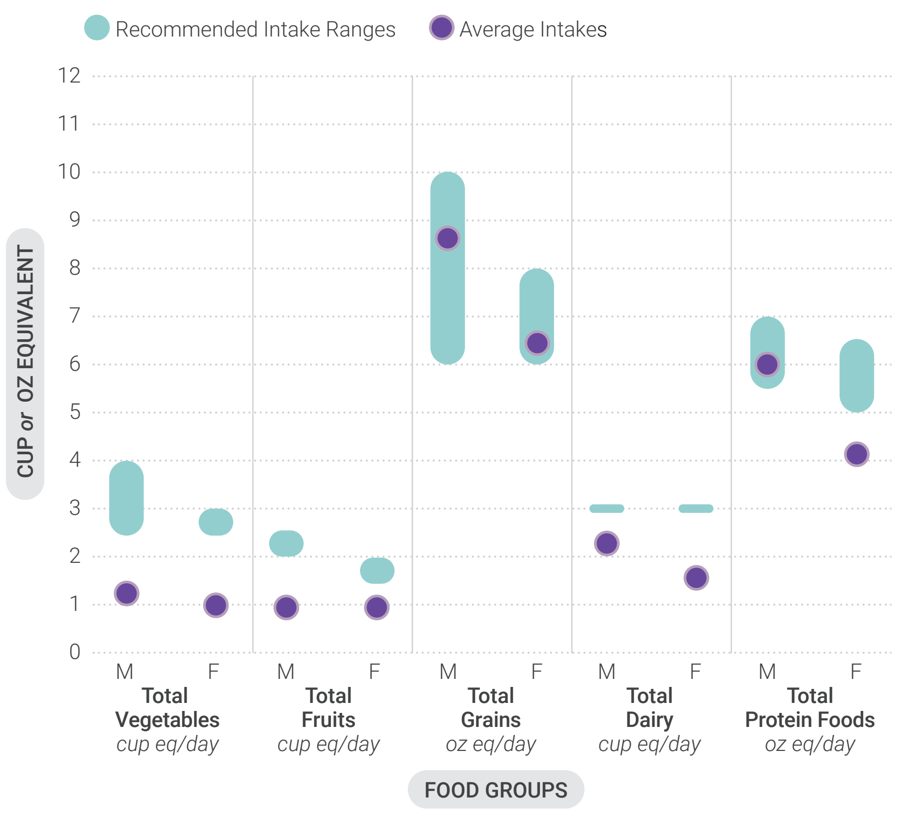
NOTE: The total dietary pattern should not exceed *Dietary Guidelines* limits for added sugars and saturated fat; be within the Acceptable Macronutrient Distribution Ranges for protein, carbohydrate, and total fats; and stay within calorie limits. Values are rounded. See ***Appendix 3*** for all calorie levels of the pattern.

Current Intakes

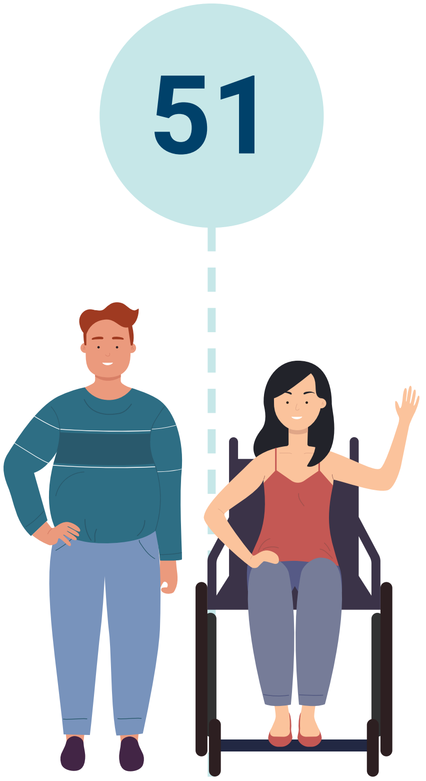
Figure 3-8

Current Intakes: Ages 14 Through 18

Average Daily Food Group Intakes Compared to Recommended Intake Ranges



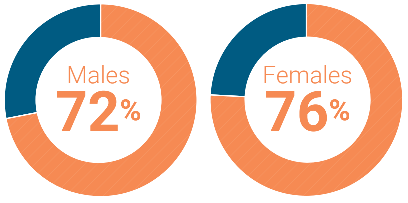
Healthy Eating Index Score (on a scale of 0-100)



Percent Exceeding Limits of Added Sugars, Saturated Fat, and Sodium

● Exceeding Limit ● Within Recommended Limit

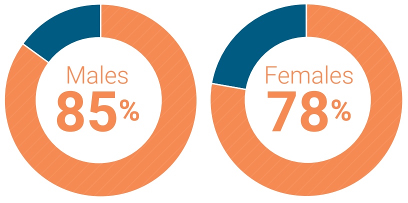
Added Sugars
Limit: 10% of total energy



Average Intakes

Males	Females
347 kcal	277 kcal

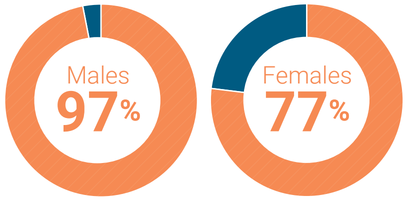
Saturated Fat
Limit: 10% of total energy



Average Intakes

Males	Females
276 kcal	204 kcal

Sodium
Limit: 2,300 mg



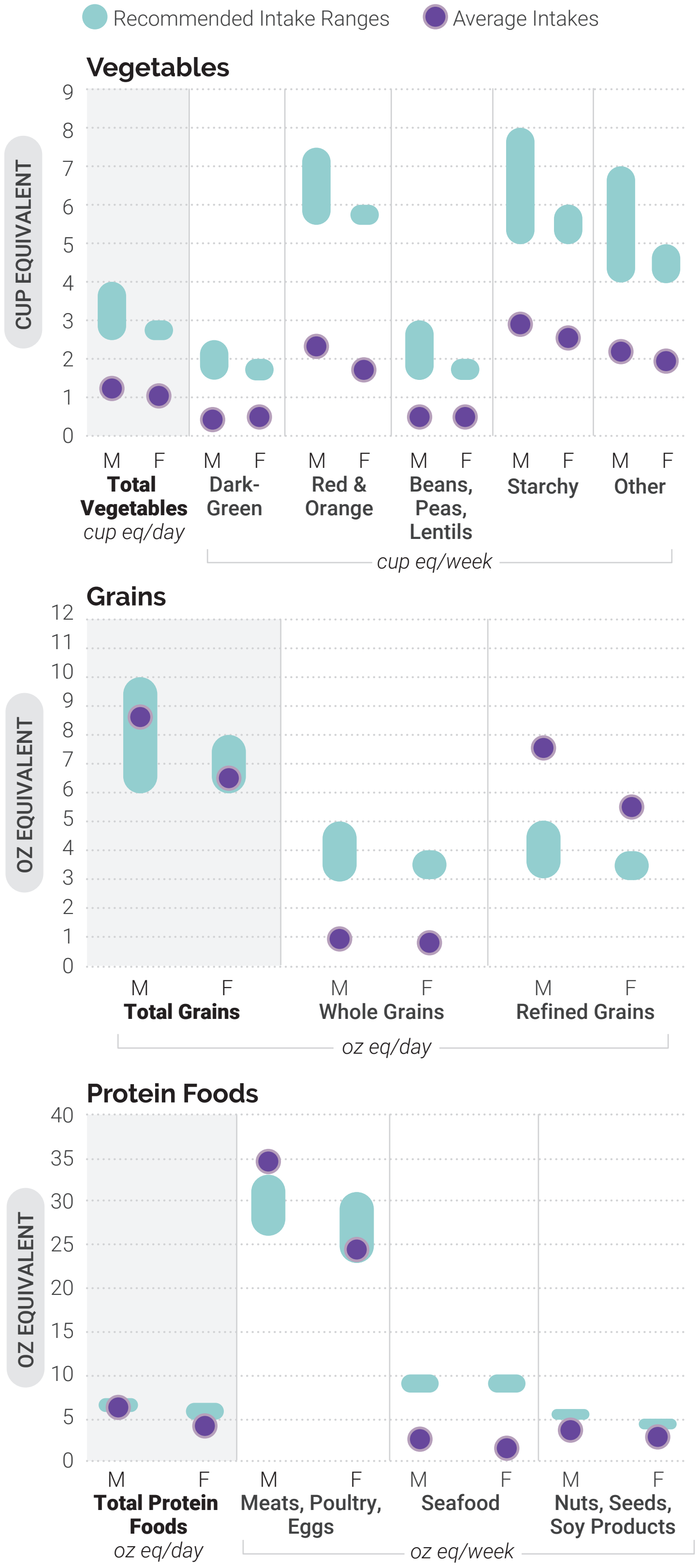
Average Intakes

Males	Females
3,888 mg	2,875 mg

Data Sources: *Average Intake and HEI-2015 Scores:* Analysis of What We Eat in America, NHANES 2015-2016, day 1 dietary intake data, weighted. *Recommended Intake Ranges:* Healthy U.S.-Style Dietary Patterns (see ***Appendix 3***). *Percent Exceeding Limits:* What We Eat in America, NHANES 2013-2016, 2 days dietary intake data, weighted.

Figure 3-9

Average Intakes of Subgroups Compared to Recommended Intake Ranges: Ages 14 Through 18



Data Sources: *Average Intakes:* Analysis of What We Eat in America, NHANES 2015-2016, day 1 dietary intake data, weighted. *Recommended Intake Ranges:* Healthy U.S.-Style Dietary Patterns (see ***Appendix 3***).

Special Considerations

The nutrition considerations for the general U.S. population described in ***Chapter 1*** apply to children and adolescents. For example, due to low intakes of food groups as described above, the nutrients of public health concern—calcium, vitamin D, potassium, and dietary fiber—apply to these life stages as well. Although the nutritional needs of youth are remarkably similar to their parents, guardians, and caregivers, these age groups do have some special nutrition considerations. Specifically, increasing intakes of sugar-sweetened beverages and decreasing intakes of dairy are dietary components with notable and concerning shifts in consumption throughout youth. Dietary intake patterns for adolescents, particularly females, also are an area of special consideration.

Accounting for the areas of dietary improvement that are important for all children and adolescents, as well as these special considerations, can improve diet quality during a time when food preferences and intake patterns are formed. When consistently followed, these healthy dietary patterns can provide the foundation for healthy dietary patterns in adulthood, promote health among youth, and help prevent the onset of chronic disease later in life.

Sugar-Sweetened Beverages

Sugar-sweetened beverages (e.g., soda, fruit drinks, sports and energy drinks) are not necessary in the child or adolescent diet nor are they a component of the USDA Dietary Patterns. Intake of added sugars increases throughout childhood and adolescence, and sugar-sweetened beverages are a top contributor. As a percent of total daily energy intake, average intake of added sugars is 11 percent among young children and peaks at 15 percent during adolescence. Coinciding with this increase is the contribution of sugar-sweetened beverages to total intake of added sugars. In childhood, sugar-sweetened beverages make up about 15 to 25 percent of total added sugars intake. By adolescence, their contribution is 32 percent and even higher when considering coffee and tea beverages with added sugars (an additional 7 percent). Most sugar-sweetened beverages (e.g., soda, sports drinks) do not contribute to meeting food group goals and often contain a high number of calories.

Decreasing consumption of sugar-sweetened beverages to reduce added sugars intake will help youth achieve a healthy dietary pattern. Beverages that contain no added sugars should be the primary choice for children and adolescents. These include water and unsweetened fat-free or low-fat milk—including low-lactose or lactose-free options or fortified soy beverage—and 100% juice within recommended amounts. Consuming beverages with no added sugars is particularly important for young children ages 2 through 8, when only a small number of calories remains for other uses after meeting food group and nutrient needs with nutrient-dense choices (**Table 3-1**). The number of calories available for other uses increases slightly as energy needs increase throughout adolescence to support growth and development (**Tables 3-2** and **3-3**). However, most adolescents do not consume foods and beverages in their nutrient-dense forms, meaning they have few or no calories remaining for added sugars.

Juice

Many juice products, such as fruit drinks, contain minimal juice content and are considered sugar-sweetened beverages because they are primarily composed of water with added sugars. The percent of juice in a beverage may be found on the package label, such as "contains 25% juice" or "100% fruit juice." The Nutrition Facts label identifies the amount of sugars in juice products that are not naturally occurring (i.e., added sugars). Although 100% fruit juice without added sugars can be part of a healthy dietary pattern, it is lower in dietary fiber than whole fruit. Dietary fiber is a dietary component of public health concern. With the recognition that fruit should mostly be consumed in whole forms, the amount of fruit juice in the USDA Food Patterns ranges from 4 fluid ounces at the lower calorie levels and no more than 10 fluid ounces at the highest calorie levels.

Dairy and Fortified Soy Alternatives

Throughout childhood and adolescence, the types of dairy foods consumed and their contribution to a healthy dietary pattern change. Milk consumption, particularly milk as a beverage, is lower and cheese intake, typically as part of mixed dishes such as sandwiches, pizza, or pasta, is higher among adolescents when compared to younger children. These differences in consumption occur alongside the widening gap between current and recommended intakes of dairy foods that occurs throughout youth. Nutrient-dense options within the dairy group are unsweetened fat-free and low-fat (1%) milk, yogurt, cheese, fortified soy beverages and yogurt, and low-lactose and lactose-free dairy products. Dairy and fortified soy alternatives provide protein and a variety of nutrients that are underconsumed during these life stages. These include three nutrients of public health concern discussed in ***Chapter 1***: potassium, calcium, and vitamin D. The nutrient composition of dairy foods highlights the importance of adequate consumption. This is especially relevant for calcium and vitamin D, given that adolescents have an increased need for consumption to support the accrual of bone mass.

Adolescent Nutrition

The difference between recommended food group amounts and current intakes is greater for adolescents ages 14 through 18 than for any other age group across the lifespan. As a result, adolescents are at greater risk of dietary inadequacy than are other age groups. For adolescent males and females, low intakes of nutrient-dense foods and beverages within the grains, dairy and alternatives, fruits, and vegetables food groups lead to low intakes of phosphorus, magnesium, and choline. Adolescent females also consume less meat, poultry, and eggs than do adolescent males, and in combination with low consumption of seafood and other protein subgroups, including beans, peas, and lentils, this results in the underconsumption of total protein. In addition, adolescent females have low dietary intakes of iron, folate, vitamin B_6, and vitamin B_{12}. The potential for nutrient deficiencies existing alongside underconsumption of nutrients of public health concern for all Americans creates a concerning constellation of nutritional risks at a time of rapid growth and development along with the onset of puberty, menarche, and hormonal changes.

Supporting Healthy Eating

The physical, mental, and emotional changes that occur as children transition from pre-school to school-age and into adolescence come with diverse and changing opportunities to support a healthy dietary pattern. Support and active engagement from the various people and places involved in the lives of children and adolescents is necessary to help establish and maintain healthy dietary patterns that support healthy weight and the prevention of chronic disease.

In early childhood, parents, guardians, and caregivers have a primary role in supporting healthy eating because they control the foods and beverages purchased, prepared, and served. Exposing young children to a variety of nutrient-dense foods within each food group helps build a healthy dietary pattern at an age when taste preferences are acquired. Introducing children to a variety of nutrient-dense foods can be challenging. As children grow, their search for a sense of autonomy and desire for independence often manifest through selective or “picky” eating, food neophobia, or food “jags” (eating only one or a few foods for periods of time). Offering the same type of food to children multiple times, in a variety of forms, or prepared in different ways can increase acceptance and intake of healthy foods within food groups. For example, children may show a dislike for vegetables in the cooked form but accept the raw version. Or, children may only accept fruit when it is cut into small, bite-sized pieces. Even with these strategies, parents, guardians, and caregivers of young children should know it may take up to 8 to 10 exposures before a child will accept a new food.

Children’s dietary patterns often resemble those of their household, highlighting the importance of their environment in the establishment of a healthy dietary pattern. Shared meals through shopping, cooking, and consumption provides parents, guardians, and caregivers with an opportunity to model healthy eating behaviors and dietary practices. By making nutrient-dense foods and beverages part of the normal household routine, children can observe and learn healthy behaviors that can extend throughout later life stages.

Ideally, children continue to be exposed to a healthy dietary pattern as they experience changes to their daily routines, such as spending time in child care or school settings. As at home, eating occasions in these settings can be used as opportunities to support a healthy dietary pattern. For example, snacks can be used as a way to promote intake of nutrient-dense fruits and vegetables, like carrot sticks and hummus or apple slices, instead of foods like chips or cookies. Using snacks as an opportunity to encourage nutrient-dense food group choices is especially relevant during early childhood when the total volume of food consumed at regular meals is lower and snacking is common.

When exposed to nutrient-dense foods and beverages at an early age and supported in making healthy choices across environments, a healthy dietary pattern can be established and maintained as children transition to the adolescence life stage. With this transition comes increasing autonomy, increased influence of peers, and decreased influence of parents, guardians, and caregivers on food choice. As a result, foods and beverages are more commonly consumed outside of the home, often with a preference for convenience foods that often are not nutrient-dense. Parents, guardians, and caregivers can continue to support healthy eating during this life stage by providing convenient access to nutrient-dense foods; involving children and adolescents in meal decisions, shopping, and cooking; and guiding adolescents’ selection of food purchased and consumed outside the home. In schools and community settings, healthy eating can be encouraged by creating an environment that makes healthy choices the norm.

Accessing a Healthy Dietary Pattern

Many resources exist to support healthy growth and development during childhood and adolescence. The following Government programs play an essential role in providing access to healthy meals and educational resources to support healthy dietary patterns for all children and adolescents.

- The **Supplemental Nutrition Assistance Program (SNAP)** provides temporary benefits to families with qualifying incomes for the purchase of foods and beverages. About one-half of all SNAP participants are children.[1]
- Households with young children may be eligible for the **Special Supplemental Nutrition Program for Women, Infants, and Children (WIC)**. WIC can help families with limited resources meet their child's nutritional needs by providing nutritious foods to supplement diets. WIC serves children up to the age of 5 years who are at nutritional risk.
- In childcare and afterschool settings, the **Child and Adult Care Food Program (CACFP)** can support the development of healthy dietary patterns. CACFP is a nutrition program that provides reimbursements for meals and snacks that align with the *Dietary Guidelines* to eligible children enrolled at childcare centers, daycare homes, and in afterschool programs.
- School-age children can benefit from the **National School Lunch Program and School Breakfast Program**. The school meal programs can provide nearly two-thirds of daily calories, and therefore play an influential role in the development of a healthy dietary pattern.
- Outside of the school year, the **Summer Food Service Program (SFSP)** fills the gap by ensuring that children continue to receive nutritious meals when school is not in session. The SFSP operates at sites in a community where children can receive nutritious meals in a safe and supervised environment.

Professionals working with youth and their families can use these, and additional Government and non-Government resources that exist at the community, to support healthy eating during these life stages and to establish the foundation for a healthy dietary pattern that will promote health and support disease prevention in later years.

Looking Toward Chapter 4: Adults

This chapter focused on nutrition issues relevant to children and adolescents. These issues are particularly important because this life stage encompasses significant transitions, from young children who are still dependent on parents, guardians, and caregivers for all their food choices, to adolescents who are highly independent in their food choices. Diet quality tends to decrease as children mature into adolescence, with resulting concerns about underconsumption of nutrients of public health concern. Establishing and maintaining healthy food and beverages choices now can set a firm foundation for healthy dietary patterns that reduce the risk of diet-related chronic disease, an issue of increasing relevance to adults, who are considered in the next chapter.

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[1] **Source:** Characteristics of Supplemental Nutrition Assistance Program Households: Fiscal Year 2018. Available at: **www.fns.usda.gov/snap/characteristics-supplemental-nutrition-assistance-program-households-fiscal-year-2018**.

ADULTS AGES 19-59

CHAPTER 4

Adults

Introduction

The adult life stage (ages 19 through 59) is characterized by independence, opportunity, and increased responsibility—from starting or completing education and training, to managing work and/or family, to planning for the transition to older adulthood. Balancing work or school responsibilities with personal, family, or other commitments can create real or perceived barriers to healthy eating. Constraints on available time and financial resources may make it challenging for adults to adopt and maintain a healthy dietary pattern. Support for healthy food and beverage choices across the multiple places where adults live, work, play, and gather is needed to improve dietary patterns among adults.

Many individuals enter the adult life stage with an unhealthy dietary pattern already established from the childhood and adolescent years. A concerted effort to change this trajectory and support adults in adopting a healthy dietary pattern is needed for better health and to promote the well-being of family and friends across life stages. Learned food and beverage preferences, and norms and values placed on diet, physical activity, and health, can positively or negatively influence health because they can determine an individual's willingness to change and maintain behaviors. These norms and values, including preferences toward certain types of food, attitudes about healthy eating, and beliefs about the importance of physical activity, can extend beyond the individual to larger social networks, influencing the behaviors of friends and older or younger family members. Among adults caring for children, role modeling healthy dietary choices is important because the food components of public health concern observed in earlier life stages are similar for adults.

Following a healthy dietary pattern, engaging in regular physical activity, and managing body weight are critical during this life stage. More than one-half of adults are living with one or more chronic disease—diseases that are often related to poor-quality diets and physical inactivity. Improving dietary patterns in adulthood can play a beneficial role in promoting health and preventing the onset or rate of progression of chronic disease. For adults with overweight or obesity, making healthful changes to dietary patterns and increasing physical activity will improve health and prevent additional weight gain and/or promote weight loss (see "**The Importance of Physical Activity**" and "**Overweight and Obesity**").

The Importance of Physical Activity

Adults who are physically active are healthier, feel better, and are less likely to develop many chronic diseases than are adults who are inactive. For adults, regular physical activity can provide both immediate benefits (e.g., boost mood, reduce stress, improve sleep) and long-term benefits (e.g., improved bone health and reduced risk of many diseases, such as cardiovascular disease, type 2 diabetes, depression, dementia, and many types of cancer).

Adults should move more and sit less throughout the day. Some physical activity is better than none. To attain the most health benefits from physical activity, adults need at least 150 to 300 minutes of moderate-intensity aerobic activity, like brisk walking or fast dancing, each week. Adults also need muscle-strengthening activity, like lifting weights or doing push-ups, at least 2 days each week.

The U.S. Department of Health and Human Service's *Physical Activity Guidelines for Americans* and related Move Your Way® resources have more information about the benefits of physical activity and tips on how to get started. Available at **health.gov/paguidelines**.

Overweight and Obesity

In the United States, 74 percent of adults have overweight or obesity, creating an increased risk for the development of other chronic health conditions, including cardiovascular disease, type 2 diabetes, and certain types of cancer.

Losing weight and maintaining weight loss is not a simple task. It requires adults to reduce the number of calories they get from foods and beverages and increase the amount expended through physical activity. Weight loss and maintenance are not likely achieved using short-term solutions. They require a commitment to long-term lifestyle change and often need support from healthcare providers, family members, and social networks. Intensive behavioral interventions that use one or more strategies—like group sessions and changes in both diet and physical activity—can be effective for individuals trying to lose a significant amount of weight. In addressing obesity, professionals should be mindful of health problems stemming from obesity-related stigma and discrimination.

The Centers for Disease Control and Prevention's website provides resources to support preventing weight gain (**cdc.gov/healthyweight/prevention/index.html**) and losing weight (**cdc.gov/healthyweight/losing_weight/index.html**).

Healthy Dietary Patterns

Adults are encouraged to follow the recommendations on the types of foods and beverages that make up a healthy dietary pattern described in ***Chapter 1. Nutrition and Health Across the Lifespan: The Guidelines and Key Recommendations***. The USDA Dietary Patterns provide a framework of nutrient-dense foods and beverages that can be adapted to accommodate budget, culture, and personal preferences to help adults follow a healthy dietary pattern and meet the Guidelines and their Key Recommendations.

Table 4-1 displays the Healthy U.S.-Style Dietary Pattern at eight calorie levels that are appropriate for most adults ages 19 through 59 years to illustrate the specific amounts and limits for food groups and other dietary components that make up healthy dietary patterns. In general, calorie needs are lower for females compared to males. Calorie needs decline throughout adulthood due to changes in metabolism that accompany aging. Level of physical activity, body composition, and the presence of chronic disease are additional factors that affect calorie needs.

Females ages 19 through 30 require about 1,800 to 2,400 calories a day. Males in this age group have higher calorie needs of about 2,400 to 3,000 a day. Calorie needs for adults ages 31 through 59 are generally lower; most females require about 1,600 to 2,200 calories a day and males require about 2,200 to 3,000 calories a day. Additional information on these estimates is provided in **Table 4-1 (footnote a)** and in ***Appendix 2. Estimated Calorie Needs***. The USDA Dietary Patterns are discussed in greater detail in ***Chapter 1*** and ***Appendix 3. USDA Dietary Patterns***.

Nutrient-Dense Foods and Beverages

Nutrient-dense foods and beverages provide vitamins, minerals, and other health-promoting components and have little added sugars, saturated fat, and sodium. Vegetables, fruits, whole grains, seafood, eggs, beans, peas, and lentils, unsalted nuts and seeds, fat-free and low-fat dairy products, and lean meats and poultry—when prepared with no or little added sugars, saturated fat, and sodium—are nutrient-dense foods.

Table 4-1

Healthy U.S.-Style Dietary Pattern for Adults Ages 19 Through 59, With Daily or Weekly Amounts From Food Groups, Subgroups, and Components

CALORIE LEVEL OF PATTERN[a]	1,600	1,800	2,000	2,200	2,400	2,600	2,800	3,000
FOOD GROUP OR SUBGROUP[b]	Daily Amount of Food From Each Group (Vegetable and protein foods subgroup amounts are per week.)							
Vegetables (cup eq/day)	**2**	**2 ½**	**2 ½**	**3**	**3**	**3 ½**	**3 ½**	**4**
	Vegetable Subgroups in Weekly Amounts							
Dark-Green Vegetables (cup eq/wk)	1 ½	1 ½	1 ½	2	2	2 ½	2 ½	2 ½
Red & Orange Vegetables (cup eq/wk)	4	5 ½	5 ½	6	6	7	7	7 ½
Beans, Peas, Lentils (cup eq/wk)	1	1 ½	1 ½	2	2	2 ½	2 ½	3
Starchy Vegetables (cup eq/wk)	4	5	5	6	6	7	7	8
Other Vegetables (cup eq/wk)	3 ½	4	4	5	5	5 ½	5 ½	7
Fruits (cup eq/day)	**1 ½**	**1 ½**	**2**	**2**	**2**	**2**	**2 ½**	**2 ½**
Grains (ounce eq/day)	**5**	**6**	**6**	**7**	**8**	**9**	**10**	**10**
Whole Grains (ounce eq/day)	3	3	3	3 ½	4	4 ½	5	5
Refined Grains (ounce eq/day)	2	3	3	3 ½	4	4 ½	5	5
Dairy (cup eq/day)	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**
Protein Foods (ounce eq/day)	**5**	**5**	**5 ½**	**6**	**6 ½**	**6 ½**	**7**	**7**
	Protein Foods Subgroups in Weekly Amounts							
Meats, Poultry, Eggs (ounce eq/wk)	23	23	26	28	31	31	33	33
Seafood (ounce eq/wk)	8	8	8	9	10	10	10	10
Nuts, Seeds, Soy Products (ounce eq/wk)	4	4	5	5	5	5	6	6
Oils (grams/day)	**22**	**24**	**27**	**29**	**31**	**34**	**36**	**44**
Limit on Calories for Other Uses (kcal/day)[c]	**100**	**140**	**240**	**250**	**320**	**350**	**370**	**440**
Limit on Calories for Other Uses (%/day)	6%	8%	12%	11%	13%	13%	13%	15%

[a] Calorie level ranges: Ages 19 through 30, Females: 1,800-2,400 calories; Males: 2,400-3,000 calories. Ages 31 through 59, Females: 1,600-2,200 calories; Males 2,200-3,000 calories. Energy levels are calculated based on median height and body weight for healthy body mass index (BMI) reference individuals. For adults, the reference man is 5 feet 10 inches tall and weighs 154 pounds. The reference woman is 5 feet 4 inches tall and weighs 126 pounds. Calorie needs vary based on many factors. The DRI Calculator for Healthcare Professionals, available at **nal.usda.gov/fnic/dri-calculator**, can be used to estimate calorie needs based on age, sex, height, weight, and activity level.

[b] Definitions for each food group and subgroup and quantity (i.e., cup or ounce equivalents) are provided in ***Chapter 1*** and are compiled in ***Appendix 3***.

[c] All foods are assumed to be in nutrient-dense forms; lean or low-fat; and prepared with minimal added sugars, refined starches, saturated fat, or sodium. If all food choices to meet food group recommendations are in nutrient-dense forms, a small number of calories remain within the overall limit of the pattern (i.e., limit on calories for other uses). The number of calories depends on the total calorie level of the pattern and the amounts of food from each food group required to meet nutritional goals. Calories up to the specified limit can be used for added sugars, saturated fat, or alcohol, or to eat more than the recommended amount of food in a food group.

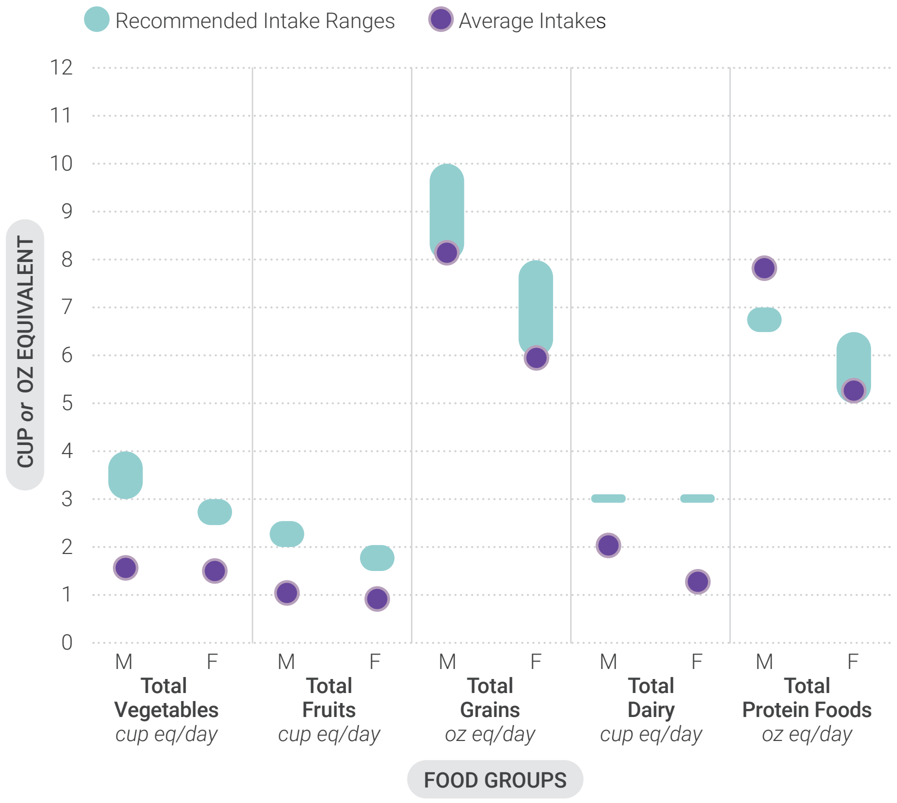
NOTE: The total dietary pattern should not exceed *Dietary Guidelines* limits for added sugars, saturated fat, and alcohol; be within the Acceptable Macronutrient Distribution Ranges for protein, carbohydrate, and total fats; and stay within calorie limits. Values are rounded. See ***Appendix 3*** for all calorie levels of the pattern.

Current Intakes

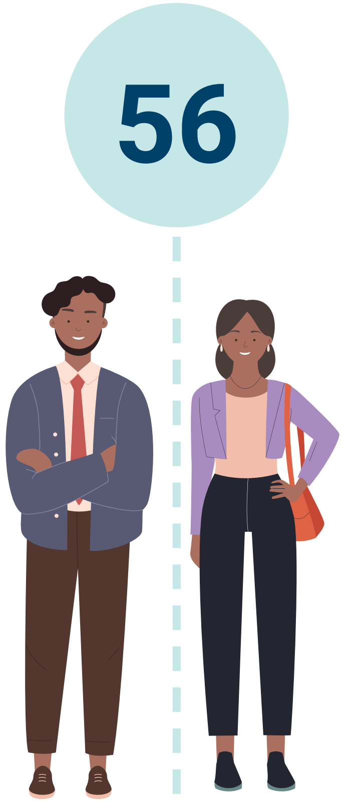
Figure 4-1

Current Intakes: Ages 19 Through 30

Average Daily Food Group Intakes Compared to Recommended Intake Ranges



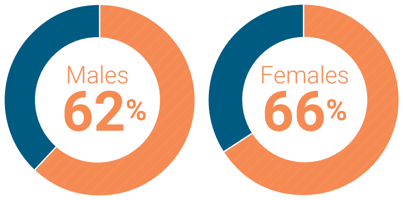
Healthy Eating Index Score (on a scale of 0-100)



Percent Exceeding Limits of Added Sugars, Saturated Fat, and Sodium

● Exceeding Limit ● Within Recommended Limit

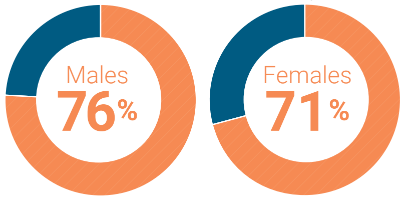
Added Sugars
Limit: 10% of total energy



Average Intakes

Males	Females
313 kcal	**271 kcal**

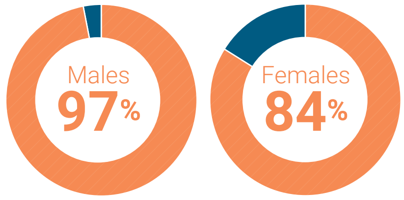
Saturated Fat
Limit: 10% of total energy



Average Intakes

Males	Females
292 kcal	**218 kcal**

Sodium
Limit: 2,300 mg



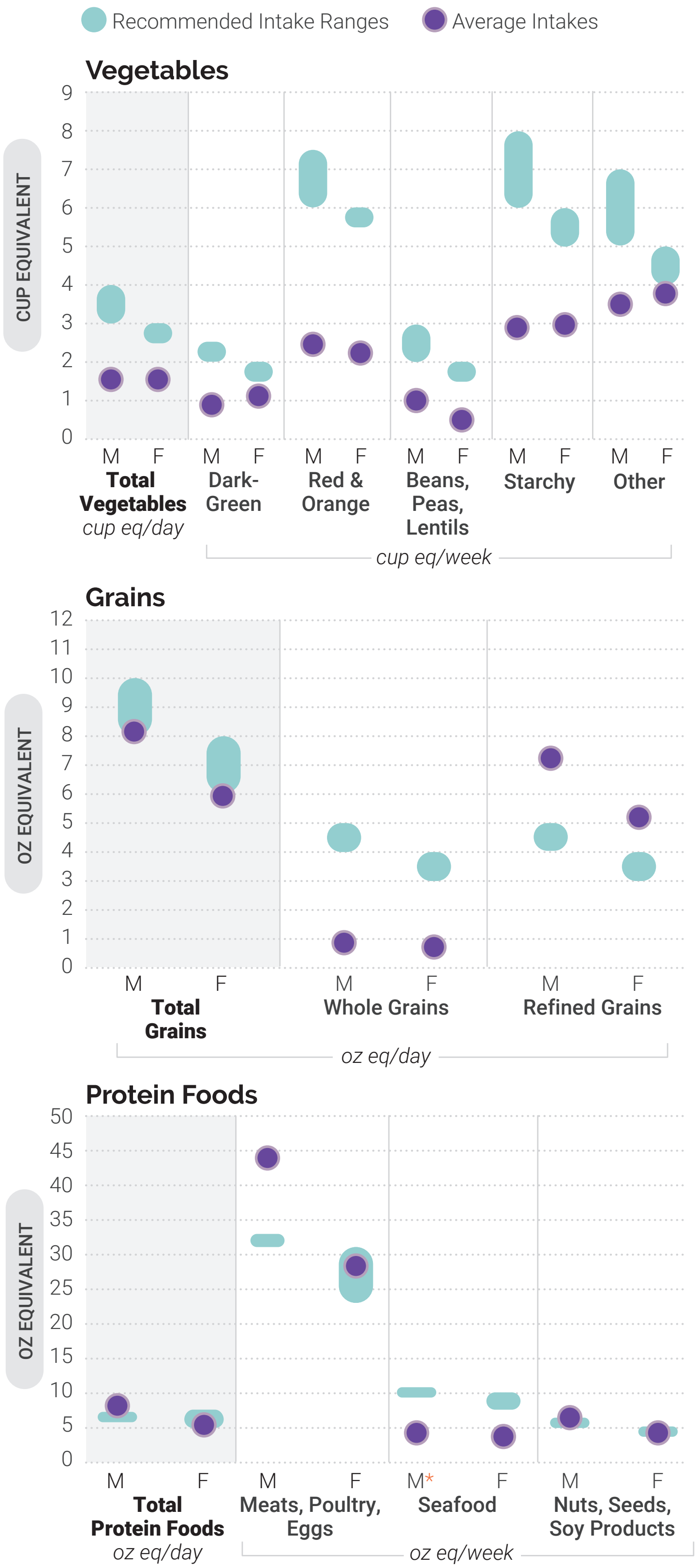
Average Intakes

Males	Females
4,274 mg	**3,142 mg**

Data Sources: *Average Intakes and HEI-2015 Scores*: Analysis of What We Eat in America, NHANES 2015-2016, day 1 dietary intake data, weighted. *Recommended Intake Ranges*: Healthy U.S.-Style Dietary Patterns (see ***Appendix 3***). *Percent Exceeding Limits*: What We Eat in America, NHANES 2013-2016, 2 days dietary intake data, weighted.

Figure 4-2

Average Intakes of Subgroups Compared to Recommended Intake Ranges: Ages 19 Through 30



***NOTE:** Estimates may be less precise than others due to small sample size and/or large relative standard error.

Data Sources: *Average Intakes*: Analysis of What We Eat in America, NHANES 2015-2016, day 1 dietary intake data, weighted. *Recommended Intake Ranges*: Healthy U.S.-Style Dietary Patterns (see ***Appendix 3***).

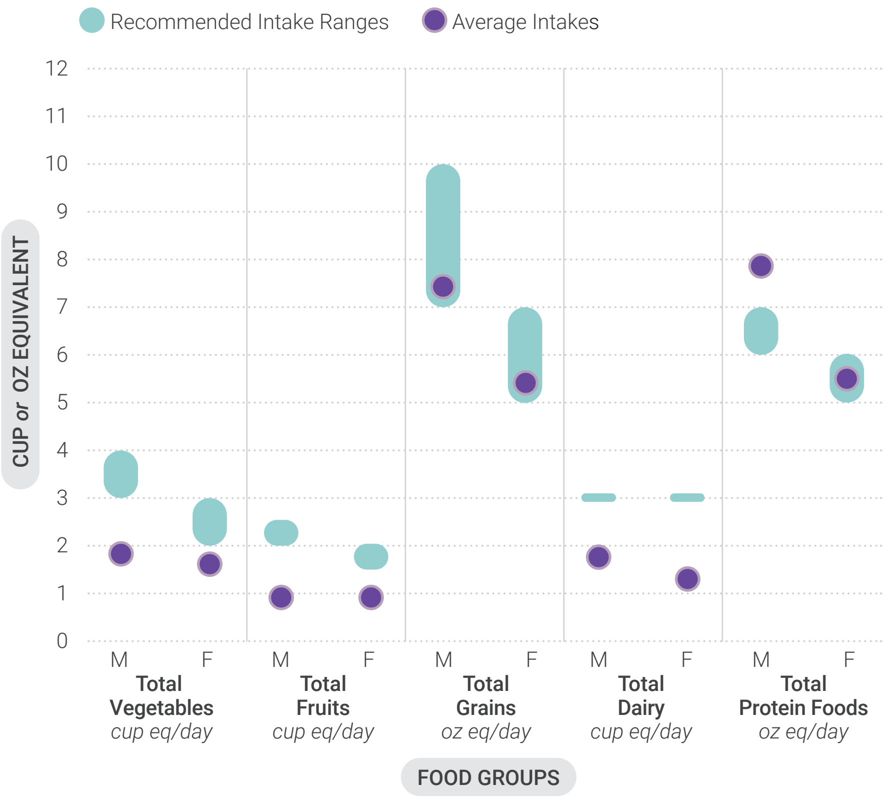
Figures 4-1 to **4-4** highlight the dietary intake of adults, including the Healthy Eating Index-2015 (HEI) score, which is an overall measure of how intakes align with the *Dietary Guidelines*, as well as information on the components of a healthy diet—specifically, the food groups. **Figures 4-1** and **4-3** display the average intakes of the food groups compared to the range of recommended intakes at the calorie levels most relevant to males and females in both adult age groups. Additionally, the percent of adults exceeding the limits for added sugars, saturated fat, and sodium is shown, along with average intakes of these components. Average intakes compared to recommended intake ranges of the subgroups for grains are represented in daily amounts; subgroups for vegetables and protein foods are represented in weekly amounts (see **Figures 4-2** and **4-4**).

The HEI scores in **Figures 4-1** and **4-3** show that adults across this life stage have diets that do not align with the recommendations for food group and nutrient intake as described in ***Chapter 1***. Although intake patterns are generally not consistent with the *Dietary Guidelines*, adults ages 31 through 59 have a slightly higher HEI score (59 out of 100) compared to adults ages 19 through 30 (56 out of 100).

Figure 4-3

Current Intakes: Ages 31 Through 59

Average Daily Food Group Intakes Compared to Recommended Intake Ranges



Healthy Eating Index Score (on a scale of 0-100)

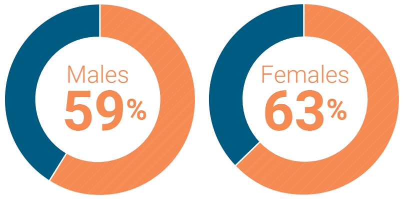
59

Percent Exceeding Limits of Added Sugars, Saturated Fat, and Sodium

● Exceeding Limit ● Within Recommended Limit

Added Sugars

Limit: 10% of total energy

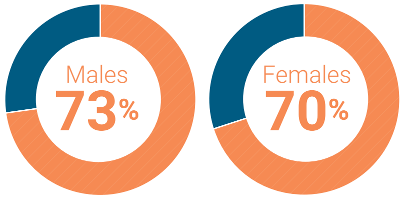


Average Intakes

Males	Females
348 kcal	**233 kcal**

Saturated Fat

Limit: 10% of total energy

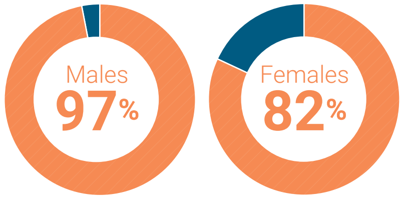


Average Intakes

Males	Females
284 kcal	**211 kcal**

Sodium

Limit: 2,300 mg



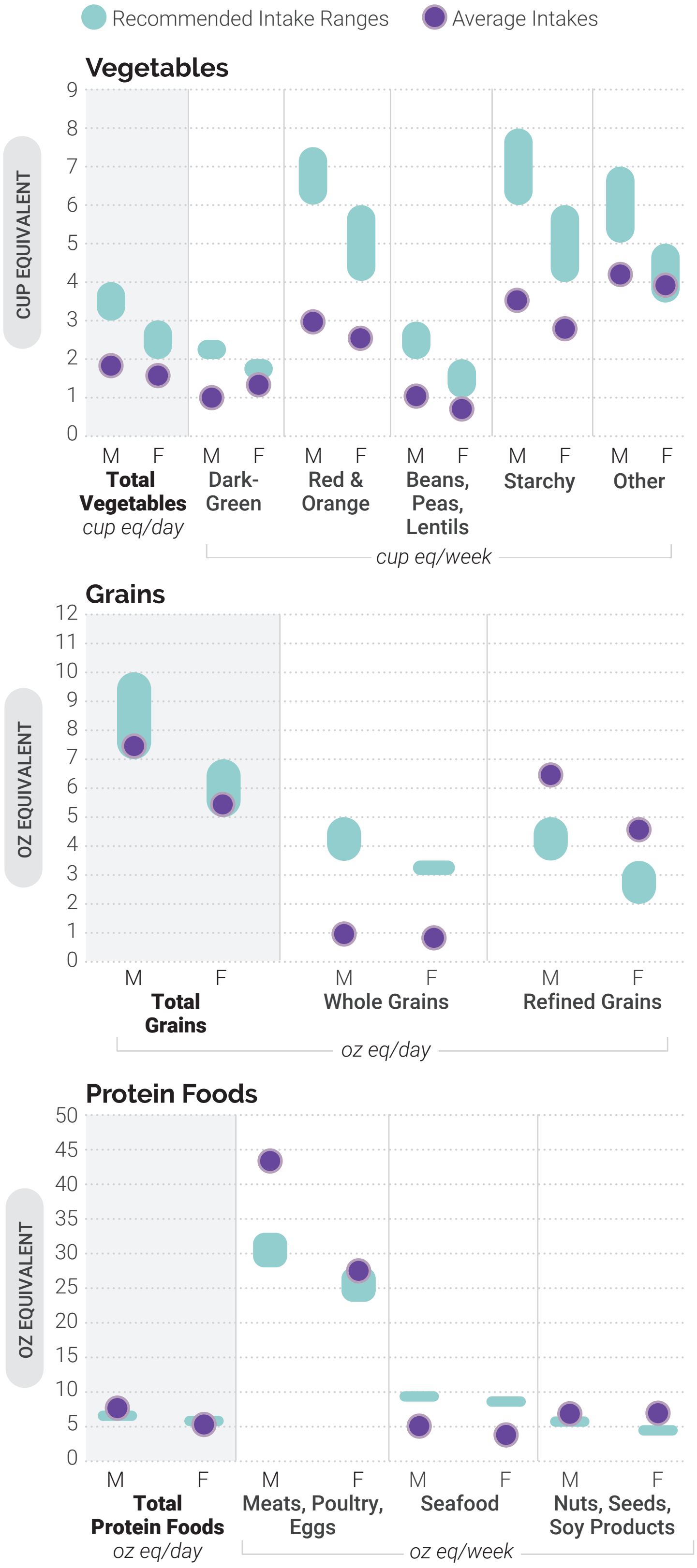
Average Intakes

Males	Females
4,172 mg	**3,062 mg**

Data Sources: *Average Intakes and HEI-2015 Scores*: Analysis of What We Eat in America, NHANES 2015-2016, day 1 dietary intake data, weighted. *Recommended Intake Ranges*: Healthy U.S.-Style Dietary Patterns (see ***Appendix 3***). *Percent Exceeding Limits*: What We Eat in America, NHANES 2013-2016, 2 days dietary intake data, weighted.

Figure 4-4

Average Intakes of Subgroups Compared to Recommended Intake Ranges: Ages 31 Through 59



Data Sources: *Average Intakes*: Analysis of What We Eat in America, NHANES 2015-2016, day 1 dietary intake data, weighted. *Recommended Intake Ranges*: Healthy U.S.-Style Dietary Patterns (see ***Appendix 3***).

Average intakes of fruits, vegetables, and dairy fall below the range of recommended intakes for all adults. Although average total grains intakes meets recommendations, **Figures 4-2** and **4-4** show that intake of whole grains is well below recommendations, and intakes of refined grains exceeds the upper end of the recommended intake range for adults in both age groups. Intakes of protein foods generally meets or exceeds recommended intake levels. Current patterns generally include meats, poultry, eggs, and nuts, seeds, and soy, while average intake of seafood falls well below recommendations. Beans, peas, and lentils—a subgroup of both the vegetable and protein foods groups—also are underconsumed by most adults.

Figures 4-1 and **4-3** show that adults are exceeding recommendations for added sugars, saturated fat, and sodium. About 60 percent of men and 65 percent of women exceed the limit for intakes of added sugars. This is an average daily intake of about 330 calories from added sugars for men and around 250 calories for women. More than 70 percent of adults are exceeding the recommendations for saturated fat. The average daily intakes of saturated fat is about 290 calories for men and 210 calories for women. The calorie levels relevant to most adults (1,600-3,000 calories) have about 100 to 400 calories remaining after food group recommendations are met through nutrient-dense choices. Combined, these average amounts of calories from added sugars and saturated fat exceed the amount most adults have available—and do not account for calories from alcoholic beverages. For sodium, nearly all men and about 80 percent of women consume too much on a given day. Men generally consume more than 4,000 mg of sodium per day and women more than 3,000 mg.

Special Considerations

The dietary considerations for the general U.S. population, including adults, are described in ***Chapter 1***. The following sections of this chapter focus on several special considerations to support a healthy dietary pattern for adults that reflect adults' current intake patterns and the prevalence of overweight and obesity and diet-related chronic disease that become more apparent in this life stage. These considerations include a focus on dietary changes to increase intakes of dietary fiber, calcium, and vitamin D and to decrease intakes of added sugars, saturated fat, and sodium. Special considerations related to alcoholic beverages also are discussed.

Dietary Fiber

Dietary patterns that do not meet recommended intakes of fruits, vegetables, and whole grains contribute to low intakes of dietary fiber. More than 90 percent of women and 97 percent of men do not meet recommended intakes for dietary fiber. This aligns with intake patterns where fruits, vegetables, and whole grains are underconsumed by more than 85 percent of adults. ***Appendix 1. Nutritional Goals for Age-Sex Groups*** provides dietary fiber goals for men and women based on the Dietary Reference Intakes. These recommendations are based on levels observed to reduce risk of coronary heart disease. Increasing intakes of fruits, vegetables, and replacing refined grains with whole grains to improve dietary fiber intakes is especially important during this life stage, as the impact of poor diet quality becomes apparent with the onset and/or progression of diet-related chronic diseases. ***Chapter 1*** provides strategies on how to increase intakes of these important food groups. A list of common food sources of dietary fiber is available at **DietaryGuidelines.gov**.

Calcium and Vitamin D

Calcium and vitamin D are important at any age, and most adults do not consume adequate amounts. Close to 30 percent of men and 60 percent of women older than age 19 years do not consume enough calcium, and more than 90 percent do not consume enough vitamin D. Dietary patterns that do not meet recommended intake amounts for food groups and subgroups, which include sources of calcium and vitamin D—such as dairy foods and fortified soy alternatives and seafood—contribute to low intake of these nutrients. Particular attention should be given to consuming adequate amounts of foods with these nutrients during adult years to promote optimal bone health and prevent the onset of osteoporosis. Adequate intake of calcium and vitamin D is particularly important for adults during the time period when peak bone mass is still actively accruing (ages 19 through about 30) and, for women, in the post-menopausal period when rapid bone remodeling occurs.

A healthy dietary pattern with nutrient-dense, calcium-rich foods, such as low-fat milk and yogurt and fortified soy alternatives and canned sardines and salmon, can help adults better meet intake recommendations. Vitamin D aids in the absorption of calcium. Consuming the recommended amount of seafood and choosing foods that are fortified with vitamin D, including milk, fortified soy beverages, and fortified soy yogurt, and some whole-grain cereals, can help adults meet their needs. In addition to dietary sources, the body can make vitamin D from the

sun. However, some individuals may have difficulty producing sufficient vitamin D from sunlight exposure or consuming enough vitamin D from foods and beverages, so a supplement may be recommended by a health professional. ***Appendix 1*** provides calcium and vitamin D goals for men and women based on the Dietary Reference Intakes. A list of common food sources of calcium and vitamin D is available at **DietaryGuidelines.gov**.

Saturated Fat

Chapter 1 explains the importance of limiting intakes of saturated fat to support healthy dietary patterns. Staying within saturated fat limits and replacing saturated fat with unsaturated fat is of particular importance during the adult life stage. The prevalence of coronary heart disease increases with age, and high LDL cholesterol peaks between the ages of 50 to 59 in men and 60 to 69 in women.

About 70 to 75 percent of adults exceed the 10-percent limit on saturated fat as a result of selecting foods and beverages across food groups that are not in nutrient-dense forms. The top sources of saturated fat for adults are sandwiches (e.g., deli sandwiches, burgers, tacos, burritos, grilled cheese, hot dogs) and other grain-based mixed dishes (e.g. spaghetti and meatballs, casseroles, quesadillas) that typically contain ingredients from several food groups that are not in nutrient-dense forms, including grains, protein foods, and dairy. Making changes to the type of ingredients as well as amount and/or frequency of their consumption will help adults lower saturated fat intake without a need to eliminate these foods from the household diet. Strategies include using lean meats and low-fat cheese to prepare these foods or substituting beans in place of meats as the protein source. Saturated fat also can be reduced by substituting certain ingredients with sources of unsaturated fat (e.g., using avocado, nuts, or seeds in a dish instead of cheese). Cooking with oils higher in polyunsaturated and monounsaturated fat (e.g., canola, corn, olive, peanut, safflower, soybean, and sunflower) instead of butter also can reduce intakes of saturated fat.

Sodium

The number of adults exceeding the Chronic Disease Risk Reduction level for sodium (see ***Chapter 1*** or ***Appendix 1***) during this life stage is concerning given that 45 percent of adults ages 18 and older are living with hypertension. During adulthood, prevalence of hypertension increases from about 22 percent of adults ages 18 through 39 to about 55 percent of adults ages 40 through 59.[1] Changing this trend is important because hypertension is a preventable risk factor for cardiovascular disease and stroke. Unlike other factors that cannot be changed, such as genetics and family history, reduced dietary intake of sodium is a modifiable risk factor that can help improve blood pressure control and reduce risk of hypertension.

Overconsumption of sodium occurs for several reasons, as discussed in ***Chapter 1***. Because sodium is found in foods and beverages across all food groups, with most coming from foods that have salt added during commercial processing rather than salt added to foods during or after preparation, reducing sodium consumption will require a joint effort by individuals, the food and beverage industry, and food service and retail establishments.

[1] Ostchega Y, Fryar CD, Nwankwo T, Nguyen DT. Hypertension prevalence among adults aged 18 and over: United States, 2017–2018. NCHS Data Brief, no 364. Hyattsville, MD: National Center for Health Statistics. 2020

Added Sugars

Most adults exceed recommended limits for added sugars as a result of eating foods and drinking beverages higher in added sugars and selecting foods and beverages across food groups that are not in nutrient-dense forms. Added sugars are of particular concern for adults because exceeding limits contributes to excess calorie intake.

BEVERAGES AS A SOURCE OF ADDED SUGARS

Sugar-sweetened beverages (e.g., soda, sports drinks, energy drinks, fruit drinks) and sweetened coffees and teas (including ready-to-drink varieties) contribute over 40 percent of daily intake of added sugars. More than in earlier life stages, adults consume coffees and teas with additions, such as sugar and flavored syrup. Frequent consumption of these and other beverages containing added sugars can contribute to excess calorie intake. Some sugar-sweetened beverages, such as coffee and tea with milk, contribute to food group intake (e.g., dairy) and can be made without added sugars. Others, such as fruit drinks, can be replaced with nutrient-dense options such as 100% juice to help meet fruit group recommendations.

Most adults' diets include choices across multiple food groups that are not in nutrient-dense forms and therefore cannot accommodate excess calories from sweetened beverages. Intake of sugar-sweetened beverages should be limited to small amounts and most often replaced with beverage options that contain no added sugars, such as water.

OTHER SOURCES OF ADDED SUGARS

A variety of foods and beverages contribute to the remaining added sugars consumed by adults. In addition to the contribution of sugar-sweetened beverages and sweetened coffees and teas, about 30 percent come from desserts and sweet snacks, candies, and sweetened breakfast cereals. The remaining 30 percent of added sugars is consumed in relatively small amounts across many food categories, as discussed in ***Chapter 1***. Many of these food categories have seen market expansion in recent years. For example, over the past decade, beverages, snacks, and bakery foods have continuously topped the list for the most new product introductions.[2] As these and other food categories continue to change and expand, it is vital for individuals to learn how to identify the amount of added sugars in a beverage or food product by reading the Nutrition Facts label (see ***Chapter 1***). Understanding which food choices contribute to intakes of added sugars without contributing to nutrient needs can help individuals remove or replace these foods with better choices that meet food group and nutrient recommendations within calorie needs.

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[2] Additional information is available at **ers.usda.gov/topics/food-markets-prices/processing-marketing/new-products.aspx**.

Alcoholic Beverages

Alcoholic beverages are not a component of the USDA Dietary Patterns and their calories are considered discretionary. Regular consumption of alcoholic beverages can make it challenging for adults to meet food group and nutrient needs while not consuming excess calories. The ingredients in certain mixed drinks, including soda, mixers, and heavy cream, also can contribute to intake of added sugars and saturated fat.

The majority of U.S. adults consume alcoholic beverages. About 66 percent of adults ages 21 through 59 report alcoholic beverage consumption in the past month, and of those, approximately half report binge drinking, sometimes multiple times per month. Among adults who choose to drink, average intakes of calories from alcoholic beverages exceed the remaining calorie limit that is available after food group recommendations are met.

There are some adults who should not drink alcoholic beverages at all, such as if they are pregnant or might be pregnant; younger than age 21; or recovering from an alcohol use disorder or if they are unable to control the amount they drink. For those who choose to drink, intakes should be limited to 1 drink or less in a day for women and 2 drinks or less in a day for men, on days when alcohol is consumed. More information in available in ***Chapter 1*** under Alcoholic Beverages.

Supporting Healthy Eating

Individuals need support in making healthy choices at home, work, and in the community to build healthy dietary patterns.

Food retail outlets (e.g., grocery stores, convenience stores, restaurants) provide adults with the option to purchase ingredients to prepare foods themselves or to purchase foods prepared by others. National food expenditures suggest the purchase of prepared foods is a regular habit for most adults, with expenditures outpacing those of foods purchased for household meal preparation.[3] Estimates also suggest that the younger generation of American adults are spending an even larger proportion of their total food dollars on prepared foods than are older generations.[4]

When adults prepare meals themselves, they have more control over the types of food ingredients selected and can focus on choosing nutrient-dense options that contribute to food group goals with little or no added sugars and saturated fat and less sodium. The same is not always true when purchasing prepared foods, despite changes and innovation in the marketplace, such as menu and product labeling or reformulation.

For some adults, preparing and consuming healthy meals at home will mean adopting a new habit and/or learning new skills, such as meal planning. For others, it may entail small changes to current routines. Planning meals and snacks in advance with food groups and nutrient-dense foods and beverages in mind can support healthy eating at home and improve dietary patterns of individuals and families. Preparing meals with family and friends also presents an opportunity for greater connection and enjoyment around food. For adults who are parents, guardians, or caregivers of children or adolescents, preparing meals also provides an opportunity to teach valuable cooking skills and model behaviors that support the adoption of healthy dietary patterns across younger life stages.

[3] Details are available at **ers.usda.gov/webdocs/publications/96957/ap-083.pdf?v=5848.3**.
[4] Details are available at **ers.usda.gov/amber-waves/2017/december/millennials-devote-larger-shares-of-their-grocery-spending-to-prepared-foods-pasta-and-sugar-and-sweets-than-other-generations**.

It is not realistic or desirable to avoid the purchase and consumption of foods prepared by others. Limits on available time and the desire for convenience make restaurant and ready-to-eat meals a part of many household routines. Many of these settings also provide for social enjoyment of food with friends and family. However, foods prepared outside of the home can contribute to the overconsumption of calories as a result of large portion sizes and methods of preparation. Being mindful of the portion sizes and ingredients of prepared foods can help adults achieve a healthy dietary pattern while still enjoying foods prepared by others. Health promotion activities that center on increasing consumer knowledge and access to healthy options in the places where Americans purchase prepared foods are needed to provide support for adults in these efforts.

Health professionals play an important role in supporting adults' healthy eating behaviors. Helping adults become more aware of the foods and beverages that make up their typical dietary patterns and identifying areas for improvement can empower individuals to make changes to the types of foods they purchase or prepare. Teaching skills like cooking and meal planning and helping adults understand how to read labels or make healthy menu substitutions also will support the adoption of a healthy dietary pattern during this life stage.

In settings where adults spend their time, changing organizational practices, approaches, and/or policies to support improved dietary patterns also is needed. Strategies include offering healthy meals and snacks in workplace cafeterias and vending machines, or implementing educational programs tailored to working adults. Or, communities can support farmers markets, community gardens, and related educational programming efforts.

Learn More

The *Federal Foodservice Guidelines* is a resource that food service providers can use to help make healthy choices more available in food service establishments. The Guidelines are available at **cdc.gov/nutrition/healthy-food-environments/food-serv-guide.html**.

Accessing a Healthy Dietary Pattern

A healthy dietary pattern can only be achieved when adequate resources and supports exist in the places where adults live, work, and gather. Food access is crucial for adults to achieve a healthy dietary pattern and is influenced by diverse factors, as discussed in ***Chapter 1***. Food insecurity, which occurs when access to nutritionally adequate and safe food is limited or uncertain, is most prevalent in households with children and in single-parent households. Income is one of the primary characteristics associated with food insecurity. Government programs, such as the **Supplemental Nutrition Assistance Program (SNAP)** or the **Food Distribution Program on Indian Reservations (FDPIR)**, serve as a resource for low-income adults by supplementing food budgets to support healthy lifestyles. Adults with children or those caring for older family members also may benefit from resources discussed in ***Chapters 2***, ***3***, and ***6***.

Additional Government and non-Government resources, such as food banks or community meal sites and programming offered through **SNAP Education (SNAP-Ed)** and the **Expanded Food and Nutrition Education Program (EFNEP)**, play a role in providing food and educational resources to support adults in making healthy food choices within a limited budget. Innovative approaches to support health, such as incentive programs at farmers markets or healthy corner-store initiatives, continue to expand. Continued attention and creativity in approaches to expand food access are needed to support a healthy dietary pattern for adults and the larger social networks that they influence.

Looking Toward Chapter 5: Women Who Are Pregnant or Lactating and Chapter 6: Older Adults

This chapter has discussed the importance of a healthy dietary pattern and related special considerations during the adult life stage. The chapter recognizes that dietary patterns are generally well established by the time individuals reach adulthood and encourages adults to take advantage of the many opportunities available to make changes that support a healthy dietary pattern. Making these changes can have important benefits for achieving a healthy weight status, reducing chronic disease risk, and promoting overall health. These considerations are especially important for the life stages discussed in the next two chapters. ***Chapter 5*** takes a closer look at a special time in the life of many adults—pregnancy and lactation. This chapter echoes the same guidance for adults on following a healthy dietary pattern and discusses several special considerations that arise during this life stage. ***Chapter 6*** then makes the transition from the Adults chapter to a focused look at healthy eating for older adults.

CHAPTER 5

Women Who Are Pregnant or Lactating

Introduction

Pregnancy and lactation are special stages of life for women, and nutrition plays a vital role before, during, and after these life stages to support the health of the mother and her child. Following a healthy dietary pattern is especially important for those who are pregnant or lactating for several reasons. Increased calorie and nutrient intakes are necessary to support the growth and development of the baby and to maintain the mother's health. Consuming a healthy dietary pattern before and during pregnancy also may improve pregnancy outcomes. In addition, following a healthy dietary pattern before and during pregnancy and lactation has the potential to affect health outcomes for both the mother and child in subsequent life stages.

This chapter addresses some important nutritional considerations for women before pregnancy and contains nutrition guidance for women during pregnancy and lactation. A healthy dietary pattern, along with changing calorie and nutrient needs during pregnancy and lactation, are described throughout the chapter. Special consideration is given to the importance of achieving and maintaining a healthy weight before pregnancy, gaining weight within gestational weight gain guidelines, and returning to a healthy weight during the postpartum period. A healthy weight status during these life stages has short- and long-term health benefits for the mother and her child. The chapter also discusses other considerations important to pregnancy and lactation, including those related to intake of seafood, alcohol, and caffeinated beverages. Finally, during pregnancy, nausea, vomiting, food aversions, and food cravings can make it difficult for some women to achieve optimal dietary intake. The chapter discusses how these can be considered when helping women who are pregnant or lactating make healthy food and beverage choices.

Healthy Dietary Patterns

Women who are pregnant or lactating are encouraged to follow the recommendations on the types of foods and beverages that make up a healthy dietary pattern described in ***Chapter 1. Nutrition and Health Across the Lifespan: The Dietary Guidelines and Key Recommendations.*** The core elements of a healthy diet for women during these life stages are similar to the recommendations for women who are not pregnant. **Table 5-1** shows the Healthy U.S.-Style Dietary Pattern to illustrate the specific amounts and limits for food groups and other dietary components that make up healthy dietary patterns at the six calorie levels most relevant to women who are pregnant or lactating. Following a healthy dietary pattern during these life stages can help women meet the Guidelines and its Key Recommendations. The USDA Dietary Patterns are discussed in greater detail in ***Chapter 1*** and ***Appendix 3. USDA Dietary Patterns.***

Table 5-2 summarizes estimated daily calorie needs during pregnancy and lactation compared to prepregnancy needs for women with a healthy prepregnancy weight. Additional information on estimates of prepregnancy calorie needs is provided in **Table 5-1 (footnote a)** and in ***Appendix 2. Estimated Calorie Needs***. As shown in **Table 5-2**, calorie needs generally increase as pregnancy progresses and remain elevated during lactation. However, it is important to note that women with a prepregnancy weight that is considered overweight or obese have lower weight gain recommendations than do women with a healthy prepregnancy weight (see "**Weight Management**"). Women should follow their healthcare provider's guidance regarding appropriate caloric intake during pregnancy and lactation, as many factors, including prepregnancy weight status, gestational weight gain, and multiple pregnancies, may affect calorie needs. In general, it is important for women who are pregnant to be under the care of a healthcare provider who can monitor their health status and the progress of their pregnancy.

The increased calorie and nutrient needs for these life stages should be met by consuming nutrient-dense food choices as part of a healthy dietary pattern. One way to achieve this is to follow the Healthy U.S.-Style Dietary Pattern throughout pregnancy and lactation, but adjust intake of food groups to reflect higher calorie patterns recommended during the second and third trimesters of pregnancy and throughout lactation. In short, women should meet their increased calorie and nutrient needs with nutrient-dense foods instead of with foods high in added sugars, saturated fat, and sodium.

The customizable components of the USDA Dietary Patterns provide flexibility that allows women—or professionals adapting these patterns—to choose from a variety of foods and beverages within each food group to suit individual preference, lifestyle, traditions, culture, and budget. This flexibility in being able to select among a variety of nutrient-dense options is particularly important for women who experience pregnancy-induced nausea, vomiting, or food aversions.

When making food and beverage choices, women should know that unless it's medically indicated to avoid for her own health, women do *not* need to restrict their choices during pregnancy or lactation to prevent food allergy from developing in their child. However, women who are pregnant should pay attention to some important food safety considerations (see "**Food Safety During Pregnancy**").

Nutrient-Dense Foods and Beverages

Nutrient-dense foods and beverages provide vitamins, minerals, and other health-promoting components and have little added sugars, saturated fat, and sodium. Vegetables, fruits, whole grains, seafood, eggs, beans, peas, and lentils, unsalted nuts and seeds, fat-free and low-fat dairy products, and lean meats and poultry—when prepared with no or little added sugars, saturated fat, and sodium—are nutrient-dense foods.

Table 5-1

Healthy U.S.-Style Dietary Pattern for Women Who Are Pregnant or Lactating, With Daily or Weekly Amounts From Food Groups, Subgroups, and Components

CALORIE LEVEL OF PATTERN[a]	1,800	2,000	2,200	2,400	2,600	2,800
FOOD GROUP OR SUBGROUP[b]	Daily Amount of Food From Each Group (Vegetable and protein foods subgroup amounts are per week.)					
Vegetables (cup eq/day)	**2 ½**	**2 ½**	**3**	**3**	**3 ½**	**3 ½**
	Vegetable Subgroups in Weekly Amounts					
Dark-Green Vegetables (cup eq/wk)	1 ½	1 ½	2	2	2 ½	2 ½
Red & Orange Vegetables (cup eq/wk)	5 ½	5 ½	6	6	7	7
Beans, Peas, Lentils (cup eq/wk)	1 ½	1 ½	2	2	2 ½	2 ½
Starchy Vegetables (cup eq/wk)	5	5	6	6	7	7
Other Vegetables (cup eq/wk)	4	4	5	5	5 ½	5 ½
Fruits (cup eq/day)	**1 ½**	**2**	**2**	**2**	**2**	**2 ½**
Grains (ounce eq/day)	**6**	**6**	**7**	**8**	**9**	**10**
Whole Grains (ounce eq/day)	3	3	3 ½	4	4 ½	5
Refined Grains (ounce eq/day)	3	3	3 ½	4	4 ½	5
Dairy (cup eq/day)	**3**	**3**	**3**	**3**	**3**	**3**
Protein Foods (ounce eq/day)	**5**	**5 ½**	**6**	**6 ½**	**6 ½**	**7**
	Protein Foods Subgroups in Weekly Amounts					
Meats, Poultry, Eggs (ounce eq/wk)	23	26	28	31	31	33
Seafood (ounce eq/wk)[c]	8	8	9	10	10	10
Nuts, Seeds, Soy Products (ounce eq/wk)	4	5	5	5	5	6
Oils (grams/day)	**24**	**27**	**29**	**31**	**34**	**36**
Limit on Calories for Other Uses (kcal/day)[d]	**140**	**240**	**250**	**320**	**350**	**370**
Limit on Calories for Other Uses (%/day)	8%	12%	11%	13%	13%	13%

[a] Calorie level ranges: Prepregnancy energy levels are calculated based on median height and body weight for healthy body mass index (BMI) for a reference woman, who is 5 feet 4 inches tall and weighs 126 pounds. The calorie levels shown in this table include estimates for women during the first trimester of pregnancy, when calorie needs generally do not increase compared to prepregnancy needs, plus the additional calories needed for the later trimesters of pregnancy and during lactation. Calorie needs vary based on many factors. Women with overweight or obesity have lower recommended gestational weight gain during pregnancy, which may affect calorie needs. The DRI Calculator for Healthcare Professionals, available at **nal.usda.gov/fnic/dri-calculator**, can be used to estimate calorie needs based on age, sex, height, weight, activity level, and pregnancy or lactation status.

[b] Definitions for each food group and subgroup and quantity (i.e., cup or ounce equivalents) are provided in ***Chapter 1*** and are compiled in ***Appendix 3***.

[c] The U.S. Food and Drug Administration (FDA) and the U.S. Environmental Protection Agency (EPA) provide joint advice regarding seafood consumption to limit methylmercury exposure for women who might become or are pregnant or lactating. Depending on body weight, some women should choose seafood lowest in methylmercury or eat less seafood than the amounts in the Healthy U.S.-Style Dietary Pattern. More information is available on the FDA and EPA websites at **FDA.gov/fishadvice** and **EPA.gov/fishadvice**.

[d] All foods are assumed to be in nutrient-dense forms; lean or low-fat; and prepared with minimal added sugars, refined starches, saturated fat, or sodium. If all food choices to meet food group recommendations are in nutrient-dense forms, a small number of calories remain within the overall limit of the pattern (i.e., limit on calories for other uses). The number of calories depends on the total calorie level of the pattern and the amounts of food from each food group required to meet nutritional goals. Calories up to the specified limit can be used for added sugars and/or saturated fat, or to eat more than the recommended amount of food in a food group.

NOTE: The total dietary pattern should not exceed *Dietary Guidelines* limits for added sugars and saturated fat; be within the Acceptable Macronutrient Distribution Ranges for protein, carbohydrate, and total fats; and stay within calorie limits. Values are rounded. See ***Appendix 3*** for all calorie levels of the pattern.

Table 5-2

Estimated Change in Calorie Needs During Pregnancy and Lactation for Women With a Healthy[a] Prepregnancy Weight

Stage of Pregnancy or Lactation	Estimated Change in Daily Calorie Needs Compared to Prepregnancy Needs
Pregnancy: 1st trimester	+ 0 calories
Pregnancy: 2nd trimester	+ 340 calories
Pregnancy: 3rd trimester	+ 452 calories
Lactation: 1st 6 months	+ 330 calories[b]
Lactation: 2nd 6 months	+ 400 calories[c]

[a] These estimates apply to women with a healthy prepregnancy weight. Women with a prepregnancy weight that is considered overweight or obese should consult their healthcare provider for guidance regarding appropriate caloric intake during pregnancy and lactation.

[b] The EER for the first 6 months of lactation is calculated by adding 500 calories/day to prepregnancy needs to account for the energy needed for milk production during this time period, then subtracting 170 calories/day to account for weight loss in the first 6 months postpartum.

[c] The EER for the second 6 months of lactation is calculated by adding 400 calories/day to prepregnancy needs to account for the energy needed for milk production during this time period. Weight stability is assumed after 6 months postpartum.

NOTE: Estimates are based on Estimated Energy Requirements (EER) set by the Institute of Medicine. Source: Institute of Medicine. *Dietary Reference Intakes for Energy, Carbohydrate, Fiber, Fat, Fatty Acids, Cholesterol, Protein, and Amino Acids*. Washington, DC: The National Academies Press; 2005.

Weight Management

Weight management is complex, so women should seek advice from a healthcare provider on the best way to achieve their goals. Women should be encouraged to achieve and maintain a healthy weight before becoming pregnant, as well as follow the gestational weight gain guidelines developed by the National Academies of Sciences, Engineering, and Medicine during pregnancy. These guidelines are outlined in **Table 5-3** and serve as a tool to help balance the benefits and risks associated with pregnancy weight change.

It is important to note that about half of women retain 10 pounds or more and nearly 1 in 4 women retain 20 pounds or more at 12 months postpartum. Postpartum weight retention results in about 1 in 7 women moving from a healthy weight classification before pregnancy to an overweight classification postpartum. Current estimates show that about half of women of childbearing age have a weight classification of overweight or obese. Women with overweight or obesity frequently exceed gestational weight gain recommendations during pregnancy, which increases the likelihood of excess postpartum weight retention.

Weight gain is a natural part of pregnancy, which is why it is important to have a plan. Meeting weight management goals may improve pregnancy outcomes, such as increasing the likelihood of delivering a healthy weight infant and improving the long-term health of both mother and child. Women are encouraged to partner with their healthcare provider and other medical professionals to achieve their goals and optimize health outcomes.

Table 5-3

Weight Gain Recommendations for Pregnancy[a]

Pre-pregnancy Weight Category	Body Mass Index	Range of Total Weight Gain (lb)	Rates of Weekly Weight Gain[b] in the 2nd and 3rd Trimesters (mean [range], lbs)
Underweight	Less than 18.5	28-40	1 [1-1.3]
Healthy Weight	18.5-24.9	25-35	1 [0.8-1]
Overweight	25-29.9	15-25	0.6 [0.5-0.7]
Obese	30 and greater	11-20	0.5 [0.4-0.6]

[a] **Reference:** Institute of Medicine and National Research Council. 2009. *Weight Gain During Pregnancy: Reexamining the Guidelines*. Washington, DC: The National Academies Press. **doi.org/10.17226/12584**.

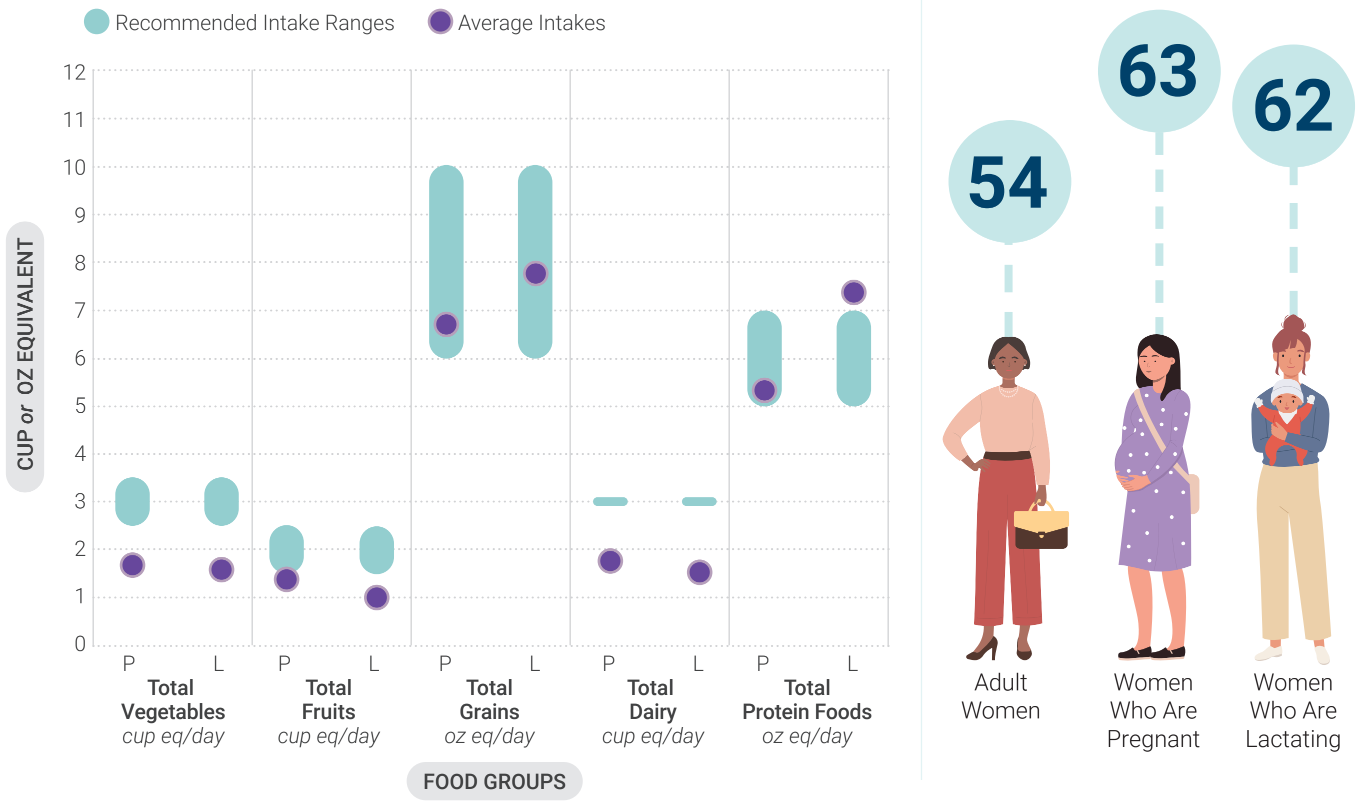
[b] Calculations assume a 1.1 to 4.4 lb weight gain in the first trimester.

Current Intakes

Figures 5-1 and **5-2** highlight the dietary intakes of women who are pregnant or lactating, including the Healthy Eating Index-2015 score, which is an overall measure of how intakes align with the *Dietary Guidelines*, as well as information on the components of a healthy diet—specifically, the food groups. **Figure 5-1** displays the average intakes of the food groups compared to the range of recommended intakes at the calorie levels most relevant to these life stages.

Figure 5-1

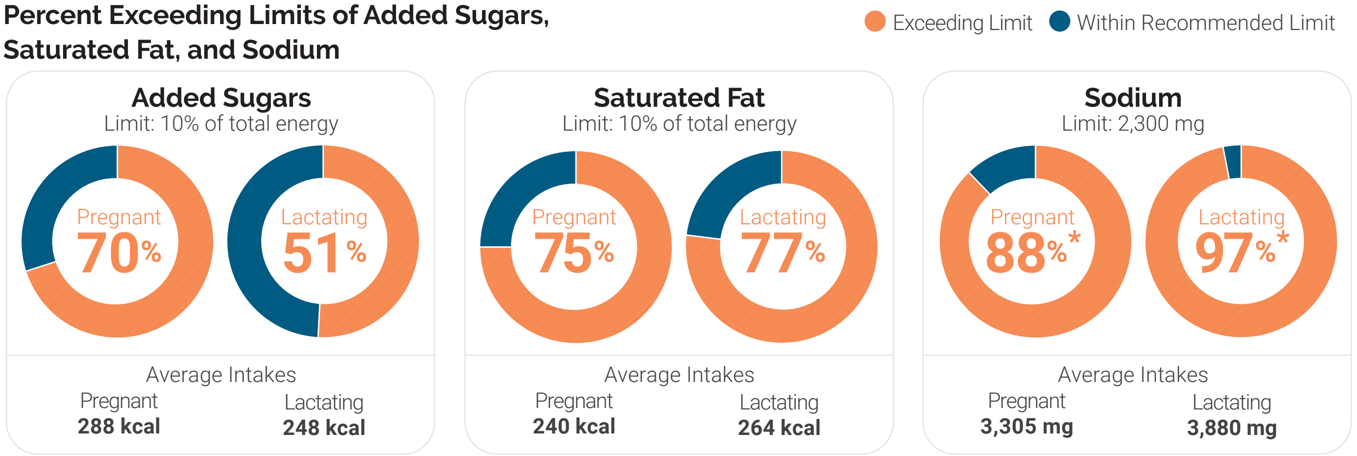
Current Intakes: Women Who Are Pregnant or Lactating



Average Daily Food Group Intakes Compared to Recommended Intake Ranges

Healthy Eating Index Score (on a scale of 0-100)

Percent Exceeding Limits of Added Sugars, Saturated Fat, and Sodium

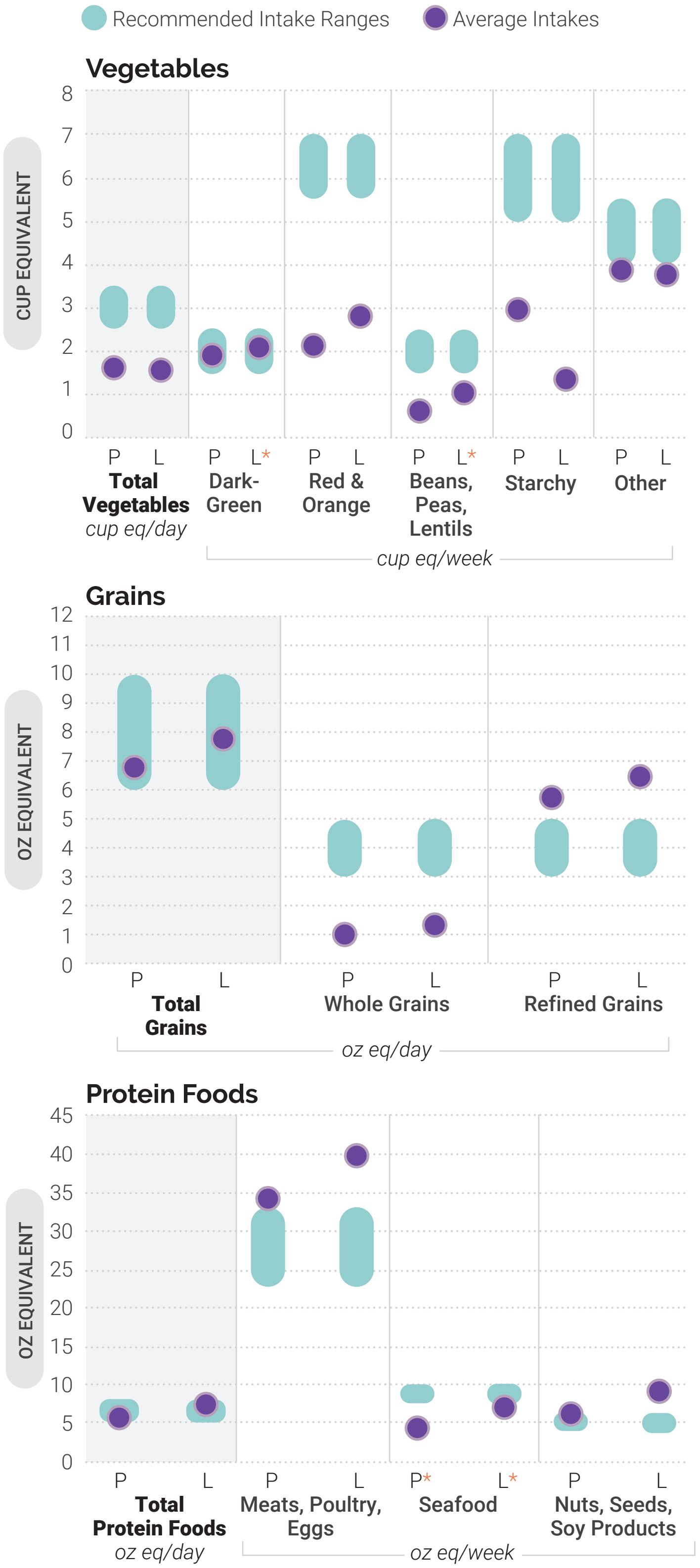


***NOTE:** Estimates may be less precise than others due to small sample size and/or large relative standard error.

Data Sources: *Average Intakes and HEI-2015 Scores*: Analysis of What We Eat in America, NHANES 2013-2016, women ages 20-44, day 1 dietary intake data, weighted. *Recommended Intake Ranges*: Healthy U.S.-Style Dietary Patterns (see ***Appendix 3).*** Percent Exceeding Limits: What We Eat in America, NHANES 2013-2016, 2 days dietary intake data, weighted.

Figure 5-2

Average Intakes of Subgroups Compared to Recommended Intake Ranges: Women Who Are Pregnant or Lactating



*__NOTE:__ Estimates may be less precise than others due to small sample size and/or large relative standard error.

Data Sources: *Average Intakes*: Analysis of What We Eat in America, NHANES 2013-2016, women ages 20-44, day 1 dietary intake data, weighted. *Recommended Intake Ranges*: Healthy U.S.-Style Dietary Patterns (see ***Appendix 3***).

Additionally, the percent of women exceeding the limits for added sugars, saturated fat, and sodium are shown, along with average intakes of these components. Finally, average intakes compared to recommended intake ranges of the subgroups for grains in daily amounts and for vegetables and protein foods in weekly amounts are also provided in **Figure 5-2**.

The Healthy Eating Index score is 63 for women who are pregnant and 62 for women who are lactating. Although diet quality is higher among women during these life stages compared to peers who are not pregnant or lactating (54), intakes are still not optimal. Women who are pregnant or lactating can benefit from making dietary changes to better align with healthy dietary patterns.

As described in ***Chapter 1***, consistent with the general U.S. population, women who are pregnant or lactating are not meeting recommendations for food group and nutrient intake. **Figures 5-1** and **5-2** show average intakes are generally below or in the lower range of recommendations for food groups and subgroups, while exceeding limits for added sugars, saturated fat, and sodium.

Special Considerations

The nutrition considerations for the general U.S. population described in ***Chapter 1*** apply to women who are pregnant or lactating. For example, the nutrients of public health concern—calcium, vitamin D, potassium, and dietary fiber—apply to these life stages as well. In addition, iron is a nutrient of public health concern for women who are pregnant. These life stages also have some special nutrient and dietary considerations regarding folate, iodine, choline, seafood, alcoholic beverages, and caffeinated beverages that are discussed in the following sections of this chapter.

Meeting Nutrient Needs

As discussed in ***Chapter 1***, nutritional needs should be met primarily through foods and beverages. However, this may be difficult for some women, especially those who are pregnant. Most healthcare providers recommend women who are pregnant or planning to become pregnant take a daily prenatal vitamin and mineral supplement in addition to consuming a healthy dietary pattern. This may be especially important to meet folate/folic acid, iron, iodine, and vitamin D needs during pregnancy (see ***Appendix 1. Nutritional Goals for Age-Sex Groups***).

Nutrient needs for women who are lactating differ from those who are pregnant. Continued use of prenatal supplements by women who are lactating may exceed their needs for folic acid and iron. Women who are lactating should not exceed the Tolerable Upper Intake Level (UL) of 1,000 micrograms of folic acid and 45 milligrams of iron. Women should seek guidance from a healthcare provider on appropriate use of prenatal or other dietary supplements during lactation.

Folate/Folic Acid

The RDA for folate is higher during pregnancy and lactation than all other life stages (see ***Appendix 1)***. Adequate folic acid intake is particularly important prior to conception and during the first trimester to help prevent neural tube defects.

The United States Preventative Services Task Force (USPSTF) recommends that all women who are planning or capable of pregnancy take a daily supplement containing 400 to 800 mcg of folic acid. The critical period for supplementation starts at least 1 month before conception and continues through the first 2 to 3 months of pregnancy. Dietary supplements may contain either folic acid or 5-methyltetrahydrofolate (5-MTHF), but only folic acid has been shown to prevent neural tube defects. Most prenatal supplements sold in the United States contain folic acid.

The recommendation for folic acid supplementation is in addition to the amounts of food folate contained in a healthy eating pattern. Folate is found inherently in dark-green vegetables and beans, peas, and lentils. All enriched grains (i.e., bread, pasta, rice, and cereal) and some corn masa flours are fortified with folic acid.

Iron

Iron needs increase during pregnancy compared to prepregnancy. For women who are lactating, before menstruation returns, iron needs fall and then return to prepregnancy levels once menstruation resumes (see ***Appendix 1***).

Iron is a key nutrient during pregnancy that supports fetal development. Iron deficiency affects about 1 in 10 women who are pregnant and 1 in 4 women during their third trimester. Heme iron, which is found in animal source foods (e.g., lean meats, poultry, and some seafood) is more readily absorbed by the body than the non-heme iron found in plant source foods (e.g., beans, peas, lentils, and dark-green vegetables). Additional iron sources include foods enriched or fortified with iron, such as many whole-wheat breads and ready-to-eat

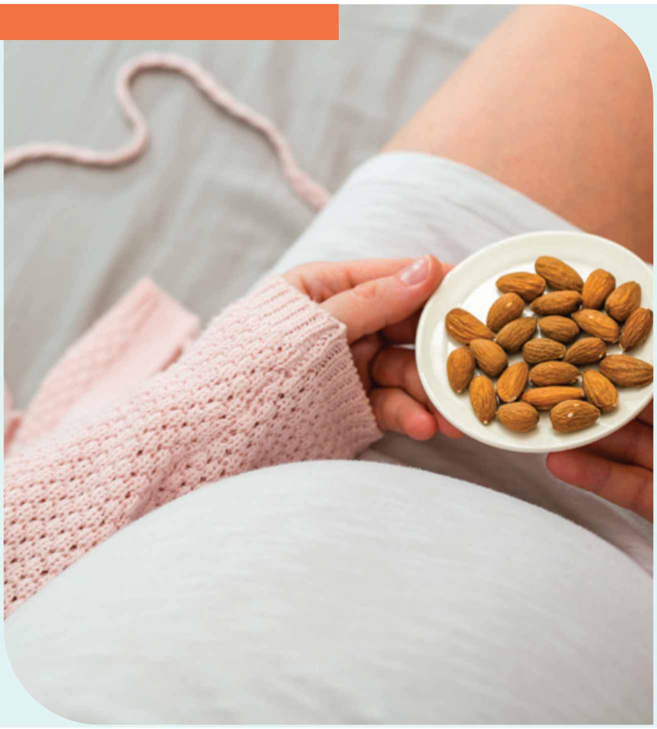
cereals. Absorption of iron from non-heme sources is enhanced by consuming them along with vitamin C-rich foods. Food source lists for both heme and non-heme iron are available at **DietaryGuidelines.gov**. Women who are pregnant or who are planning to become pregnant are advised to take a supplement containing iron when recommended by an obstetrician or other healthcare provider.

More than half of women continue to use prenatal supplements during lactation. Most prenatal supplements are designed to meet the higher iron needs of pregnancy. Depending on various factors—such as when menstruation returns—prenatal supplements may exceed the iron needs of women who are lactating. Women should seek guidance from a healthcare provider regarding the appropriate level of iron supplementation during lactation based on their unique needs.

Iodine

Iodine needs increase substantially during pregnancy and lactation (see ***Appendix 1***). Adequate iodine intake during pregnancy is important for neurocognitive development of the fetus. Although women of reproductive age generally have adequate iodine intake, some women, particularly those who do not regularly consume dairy products, eggs, seafood, or use iodized table salt, may not consume enough iodine to meet increased needs during pregnancy and lactation.

Women who are pregnant or lactating should not be encouraged to start using table salt if they do not do so already. However, they should ensure that any table salt used in cooking or added to food at the table is iodized. Additionally, women who are pregnant or lactating may need a supplement containing iodine in order to achieve adequate intake. Many prenatal supplements do not contain iodine. Thus, it is important to read the label.



Vegetarian or Vegan Dietary Patterns During Pregnancy and Lactation

Women following a vegetarian or vegan dietary pattern during these life stages may need to take special care to ensure nutrient adequacy. Iron may be of particular concern because plant source foods only contain non-heme iron, which is less bioavailable than heme iron. Food source lists for both heme and non-heme iron are available at **DietaryGuidelines.gov**. Vitamin B_{12} also is of concern because it is present only in animal source foods. Women following a vegetarian or vegan dietary pattern should consult with a healthcare provider to determine whether supplementation of iron, vitamin B_{12}, and/or other nutrients such as choline, zinc, iodine , or EPA/DHA is necessary and if so, the appropriate levels to meet their unique needs.

Choline

Choline needs also increase during pregnancy and lactation (see ***Appendix 1***). Adequate intake of choline during these life stages helps to both replenish maternal stores and support the growth and development of the child's brain and spinal cord.

Most women do not meet recommended intakes of choline during pregnancy and lactation. Women are encouraged to consume a variety of choline-containing foods during these life stages. Choline can be found throughout many food groups and subgroups. Meeting recommended intakes for the dairy and protein food groups—with eggs, meats, and some seafood being notable sources—as well as the beans, peas, and lentils subgroup can help meet choline needs. Meeting nutrient needs through foods and beverages is preferred, but women who are concerned about meeting recommendations should speak with their healthcare provider to determine whether choline supplementation is appropriate. Many prenatal supplements do not contain choline or only contain small amounts inadequate to meet recommendations.

Seafood

Seafood intake during pregnancy is recommended, as it is associated with favorable measures of cognitive development in young children. Women who are pregnant or lactating should consume at least 8 and up to 12 ounces of a variety of seafood per week, from choices lower in methylmercury. The U.S. Food and Drug Administration (FDA) and the U.S. Environmental Protection Agency (EPA) provide joint advice regarding seafood consumption to limit methylmercury exposure for women who might become or who are pregnant or lactating. Methylmercury can be harmful to the brain and nervous system if a person is exposed to too much of it over time; this is particularly important during pregnancy because eating too much of it can have negative effects on the developing fetus. Based on FDA and EPA's advice, depending on body weight, some women should choose seafood lowest in methylmercury or eat less seafood than the amounts in the Healthy U.S.-Style Dietary Pattern. Additionally, certain species of seafood (e.g., shark, swordfish, king mackerel) should be avoided during pregnancy. More information is available on the FDA or EPA websites at **FDA.gov/fishadvice** and **EPA.gov/fishadvice**.

Alcoholic Beverages

Women who are or who may be pregnant should not drink alcohol. However, consumption of alcohol during pregnancy continues to be of concern in the United States. Among women who are pregnant, about 1 in 10 reported consuming alcohol during the past month, with an average intake of 2 or more drink equivalents on days alcohol is consumed.

It is not safe for women to drink any type or amount of alcohol during pregnancy. Women who drink alcohol and become pregnant should stop drinking immediately and women who are trying to become pregnant should

not drink at all. Alcohol can harm the baby at any time during pregnancy, even during the first or second month when a woman may not know she is pregnant.

Not drinking alcohol also is the safest option for women who are lactating. Generally, moderate consumption of alcoholic beverages by a woman who is lactating (up to 1 standard drink in a day) is not known to be harmful to the infant, especially if the woman waits at least 2 hours after a single drink before nursing or expressing breast milk. Additional information on breastfeeding and alcohol can be found at: **cdc.gov/breastfeeding/breastfeeding-special-circumstances/vaccinations-medications-drugs/alcohol.html**. Women considering consuming alcohol during lactation should talk to their healthcare provider.

Caffeine

Many women consume caffeine during pregnancy or lactation. As discussed in ***Chapter 1***, most intake of caffeine in the United States comes from coffee, tea, and soda. Caffeinated beverages vary widely in their caffeine content. Caffeine passes from the mother to infant in small amounts through breast milk, but usually does not adversely affect the infant when the mother consumes low to moderate amounts (about 300 milligrams or less per day, which is about 2 to 3 cups of coffee). More information is available at: **cdc.gov/breastfeeding/breastfeeding-special-circumstances/diet-and-micronutrients/maternal-diet.html**. Women who could be or who are pregnant should consult their healthcare providers for advice concerning caffeine consumption.

Food Safety During Pregnancy

Women who are pregnant and their unborn children are more susceptible than are the general population to the effects of foodborne illnesses, such as listeriosis. They need to take special care to keep foods safe and to not eat foods that increase the risk of foodborne illness. During pregnancy, women should only eat foods containing seafood, meats, poultry, or eggs that have been cooked to recommended safe minimum internal temperatures. They also should take special precautions not to consume unpasteurized (raw) juice or milk, raw sprouts, or some soft cheeses made from unpasteurized milk. Deli and luncheon meats and hot dogs should be reheated to steaming hot or 165°F to kill *Listeria*, the bacteria that causes listeriosis.

Additional food safety resources for pregnant women are available at **fda.gov/media/83740/download and foodsafety.gov/people-at-risk/pregnant-women**, and specific answers to food safety questions are available at **fsis.usda.gov/wps/portal/fsis/topics/food-safety-education/get-answers**.

Physical Activity During Pregnancy and Postpartum

PREGNANCY

Physical activity during pregnancy can benefit both the mother and the baby. Physical activity increases or maintains cardiorespiratory fitness and reduces the risk of excessive weight gain and gestational diabetes.

For many benefits, healthy women without contraindications should do a least 150 minutes of moderate-intensity aerobic activity a week, as they are able. Women who habitually did vigorous-intensity activity or a lot of aerobic or muscle-strengthening physical activity before pregnancy can continue to do so during pregnancy. Women can consult their healthcare provider about whether or how to adjust their physical activity during pregnancy.

POSTPARTUM

Physical activity following the birth of a child continues to benefit a woman's overall health. Physical activity during the postpartum period increases cardiorespiratory fitness, improves mood, and reduces the symptoms of postpartum depression. Additionally, physical activity can help achieve and maintain a healthy weight and, when combined with caloric restriction, helps promote weight loss.

Women should start slow and build back up to more activity over time. Women should aim for at least 150 minutes of moderate-intensity aerobic activity a week.

The U.S. Department of Health and Human Service's *Physical Activity Guidelines for Americans* and the Move Your Way® communications campaign have information about the benefits of physical activity and tips to get started. Available at **health.gov/paguidelines**.

Supporting Healthy Eating

Many women have increased interest in and motivation to make healthy lifestyle changes during pregnancy and lactation. Furthermore, the dietary choices made during these life stages can affect women's health and the health of their children. Supporting women in adopting healthy dietary patterns during this important time of life and sustaining them thereafter also enables them to serve as role models when their children begin transitioning to complementary foods.

Women who are pregnant or lactating face many real or perceived barriers when trying to meet the recommendations of the *Dietary Guidelines*. Constraints on time and financial resources, limited access to high-quality childcare and family leave policies, as well as inadequate breastfeeding support at home or at work are barriers women may face. These barriers should be considered by all those who support women in their efforts to follow a healthy dietary pattern.

Ensuring women have access to healthy, safe food is vital due to the critical role nutrition plays in health promotion during these life stages. This is particularly critical for families dealing with food insecurity, which is most prevalent in households with children and in single-parent households. Participation in Federal programs, such as the **Special Supplemental Nutrition Program for Women, Infants, and Children (WIC),** which serves low-income pregnant, breastfeeding, and non-breastfeeding postpartum women, and infants and children up to age 5, can help alleviate these challenges and improve dietary intake for many women and children facing economic hardship. The **Supplemental Nutrition Assistance Program (SNAP)** and the **Food Distribution Program on Indian Reservations (FDPIR)** can also serve as resources for low-income women and their families by both supplementing food budgets to support health and by providing nutrition education through the **SNAP-Ed program**. Additionally, USDA's **Healthy Eating on A Budget**[1] can help women and families plan and prepare healthy, inexpensive meals. Other Government and non-Government resources, such as food banks or community meal programs, also provide food and educational resources that can support women in making healthy food choices for themselves and their families.

Support during lactation can help women meet their breastfeeding goals, despite significant demands on their time and energy during this life stage. Worksite programs and policies that allow women adequate time to pump breast milk when away from their child, as well as access to good quality childcare, can allow women who return to work to achieve breastfeeding goals. Access to breastfeeding peer counselors, such as those used in WIC, or free breastfeeding support groups through local hospitals also can support women during this life stage. Additionally, health professionals can promote the **USDA's WIC Breastfeeding Support**[2] and the U.S. Department of Health and Human Services Office of Women's Health (OWH) **Your Guide to Breastfeeding**[3] and their **National Breastfeeding Helpline**[4] (800-994-9662), which are freely accessible to all women.

Health professionals, policymakers, worksite administrators, community leaders, families, and friends should consider these barriers and opportunities when seeking to support women and families. Developing programs and resources that reduce barriers and create opportunities can help women meet their dietary needs and improve their overall health and the health of their children.

For more information on meeting the *Dietary Guidelines* for children during their first 2 years of life, see ***Chapter 2. Infants and Toddlers***

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[1] Available at: **MyPlate.gov/budget**

[2] Available at: **wicbreastfeeding.fns.usda.gov/**

[3] Available at: **womenshealth.gov/files/your-guide-to-breastfeeding.pdf**

[4] Available at: **womenshealth.gov/about-us/what-we-do/programs-and-activities/helpline**

CHAPTER 6

Older Adults

Introduction

Older adults include individuals ages 60 and older—a life stage that includes a broad range of ages and is influenced by a number of health and social changes that affect this population's nutritional status. Compared to younger adults, older adults are at greater risk of chronic diseases, such as cardiovascular disease and cancer, as well as health conditions related to changes in bone and muscle mass, such as osteoporosis and sarcopenia, respectively. An increasing number of older adults start this life stage with excess body weight. Preventing additional weight gain and achieving a healthy weight by following a healthy dietary pattern and adopting an active lifestyle can support healthy aging.

Selecting healthy food and beverage choices is important for people throughout this life stage, regardless of their race or ethnicity or their current health status. It is never too late to make improvements. Older adults should follow a healthy dietary pattern because of the changing dietary needs and the heightened risk of malnutrition that occurs with age. Older adults generally have lower calorie needs but similar or even increased nutrient needs compared to younger adults. The overall nutrient density of dietary patterns is particularly important to this age group. Lower calorie needs result from less physical activity, changes in metabolism, and/or age-related loss in bone and muscle mass. Other factors may affect nutrient needs and absorption of nutrients in older adults, including chronic disease and conditions, use of multiple medications, and changes in body composition. The healthy dietary patterns described below take the unique needs of older adults into account and are further supported by special considerations and strategies for professionals to support healthy aging.

Nutrient-Dense Foods and Beverages

Nutrient-dense foods and beverages provide vitamins, minerals, and other health-promoting components and have little added sugars, saturated fat, and sodium. Vegetables, fruits, whole grains, seafood, eggs, beans, peas, and lentils, unsalted nuts and seeds, fat-free and low-fat dairy products, and lean meats and poultry—when prepared with no or little added sugars, saturated fat, and sodium—are nutrient-dense foods.

Healthy Dietary Patterns

Older adults are encouraged to follow the recommendations on the types of foods and beverages that make up a healthy dietary pattern described in ***Chapter 1. Nutrition and Health Across the Lifespan: The Guidelines and Key Recommendations*. Table 6-1** displays the Healthy U.S.-Style Dietary Pattern to illustrate the specific food group amounts and limits for other dietary components that make up healthy dietary patterns at the six calorie levels most relevant to older adults.

Calorie needs are generally lower for females compared to males, and for those who are older, smaller, and less physically active. Females ages 60 and older require about 1,600 to 2,200 calories per day and males ages 60 and older require about 2,000 to 2,600 calories per day. Additional information on these estimates is provided in **Table 6-1 (footnote a)** and in ***Appendix 1. Estimated Calorie Needs***.

The USDA Food Patterns are discussed in greater detail in ***Chapter 1. Nutrition and Health Across the Lifespan: The Guidelines and Key Recommendations*** and ***Appendix 3. USDA Dietary Patterns***. The USDA Dietary Patterns provide a framework to help older adults follow a healthy dietary pattern and meet the Guidelines and their Key Recommendations. The Patterns provide a variety of food and beverage choices that allow individuals to customize their choices within each food group based on lifestyle, traditions, culture, and/or other individual needs.

Table 6-1

Healthy U.S.-Style Dietary Pattern for Adults Ages 60 and Older, With Daily or Weekly Amounts From Food Groups, Subgroups, and Components

CALORIE LEVEL OF PATTERN[a]	**1,600**	**1,800**	**2,000**	**2,200**	**2,400**	**2,600**
FOOD GROUP OR SUBGROUP[b]	Daily Amount of Food From Each Group (Vegetable and protein foods subgroup amounts are per week.)					
Vegetables (cup eq/day)	**2**	**2 ½**	**2 ½**	**3**	**3**	**3 ½**
	Vegetable Subgroups in Weekly Amounts					
Dark-Green Vegetables (cup eq/wk)	1 ½	1 ½	1 ½	2	2	2 ½
Red & Orange Vegetables (cup eq/wk)	4	5 ½	5 ½	6	6	7
Beans, Peas, Lentils (cup eq/wk)	1	1 ½	1 ½	2	2	2 ½
Starchy Vegetables (cup eq/wk)	4	5	5	6	6	7
Other Vegetables (cup eq/wk)	3 ½	4	4	5	5	5 ½
Fruits (cup eq/day)	**1 ½**	**1 ½**	**2**	**2**	**2**	**2**
Grains (ounce eq/day)	**5**	**6**	**6**	**7**	**8**	**9**
Whole Grains (ounce eq/day)	3	3	3	3 ½	4	4 ½
Refined Grains (ounce eq/day)	2	3	3	3 ½	4	4 ½
Dairy (cup eq/day)	**3**	**3**	**3**	**3**	**3**	**3**
Protein Foods (ounce eq/day)	**5**	**5**	**5 ½**	**6**	**6 ½**	**6 ½**
	Protein Foods Subgroups in Weekly Amounts					
Meats, Poultry, Eggs (ounce eq/wk)	23	23	26	28	31	31
Seafood (ounce eq/wk)	8	8	9	9	10	10
Nuts, Seeds, Soy Products (ounce eq/wk)	4	4	5	5	5	5
Oils (grams/day)	**22**	**24**	**27**	**29**	**31**	**34**
Limit on Calories for Other Uses (kcal/day)[c]	**100**	**140**	**240**	**250**	**320**	**350**
Limit on Calories for Other Uses (%/day)	7%	8%	12%	12%	13%	5

[a] Calorie level ranges: Females: 1,600-2,200 calories; Males: 2,000-2,600 calories. Energy levels are calculated based on median height and body weight for healthy body mass index (BMI) reference individuals. For adults, the reference man is 5 feet 10 inches tall and weighs 154 pounds. The reference woman is 5 feet 4 inches tall and weighs 126 pounds. Calorie needs vary based on many factors. The DRI Calculator for Healthcare Professionals, available at **nal.usda.gov/fnic/dri-calculator**, can be used to estimate calorie needs based on age, sex, height, weight, and physical activity level.

[b] Definitions for each food group and subgroup and quantity (e.g., cup or ounce equivalents) are provided in ***Chapter 1*** and are compiled in ***Appendix 3.***

[c] All foods are assumed to be in nutrient-dense forms; lean or low-fat and prepared with minimal added sugars; refined starches, saturated fat, or sodium. If all food choices to meet food group recommendations are in nutrient-dense forms, a small number of calories remain within the overall limit of the pattern (i.e., limit on calories for other uses). The number of calories depends on the total calorie level of the pattern and the amounts of food from each food group required to meet nutritional goals. Calories up to the specified limit can be used for added sugars, saturated fat, and/or alcohol, or to eat more than the recommended amount of food in a food group.

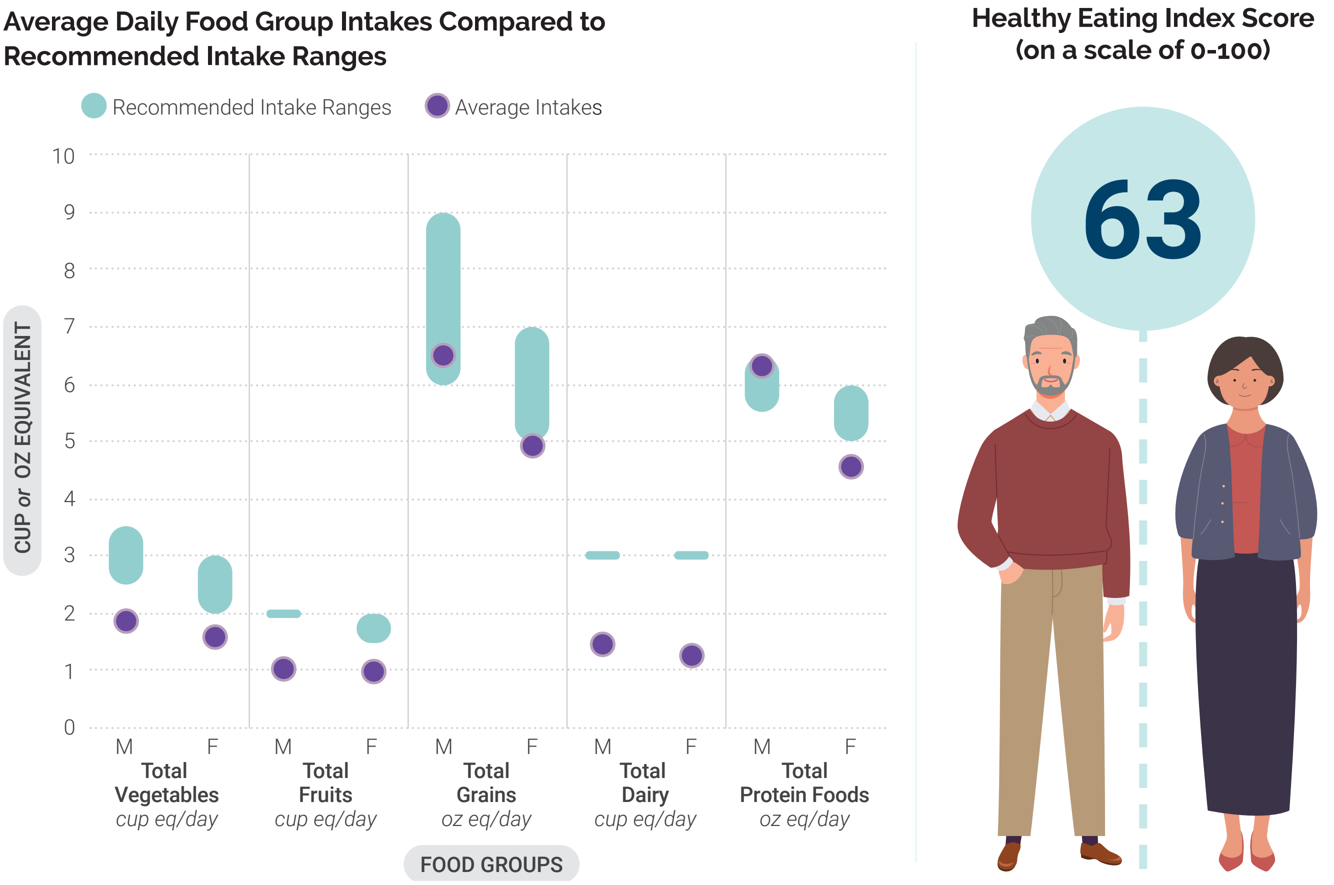
NOTE:** The total dietary pattern should not exceed *Dietary Guidelines* limits for added sugars, saturated fat, and alcohol; be within the Acceptable Macronutrient Distribution Ranges for protein, carbohydrate, and total fats; and stay within calorie limits. Values are rounded. See ***Appendix 3 for all calorie levels of the pattern.

Current Intakes

Figures 6-1 and **6-2** highlight the dietary intakes of older adults, including the Healthy Eating Index-2015 score, which is an overall measure of how intakes align with the *Dietary Guidelines*, as well as information on the components of a healthy diet—specifically, the food groups. **Figure 6-1** displays the average intakes of the food groups compared to the range of recommended intakes at the calorie levels most relevant to males and females in this age group. Additionally, the percent of older adults exceeding the recommended limits for added sugars, saturated fat, and sodium are shown, along with average intakes of these components.

Figure 6-1

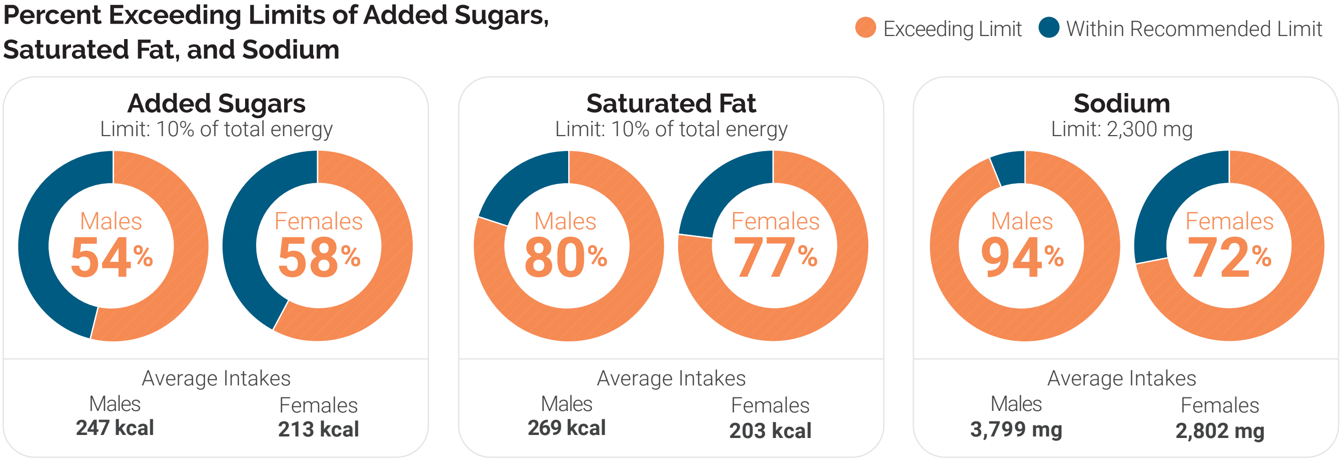
Current Intakes: Ages 60 and Older



Average Daily Food Group Intakes Compared to Recommended Intake Ranges

Healthy Eating Index Score (on a scale of 0-100)

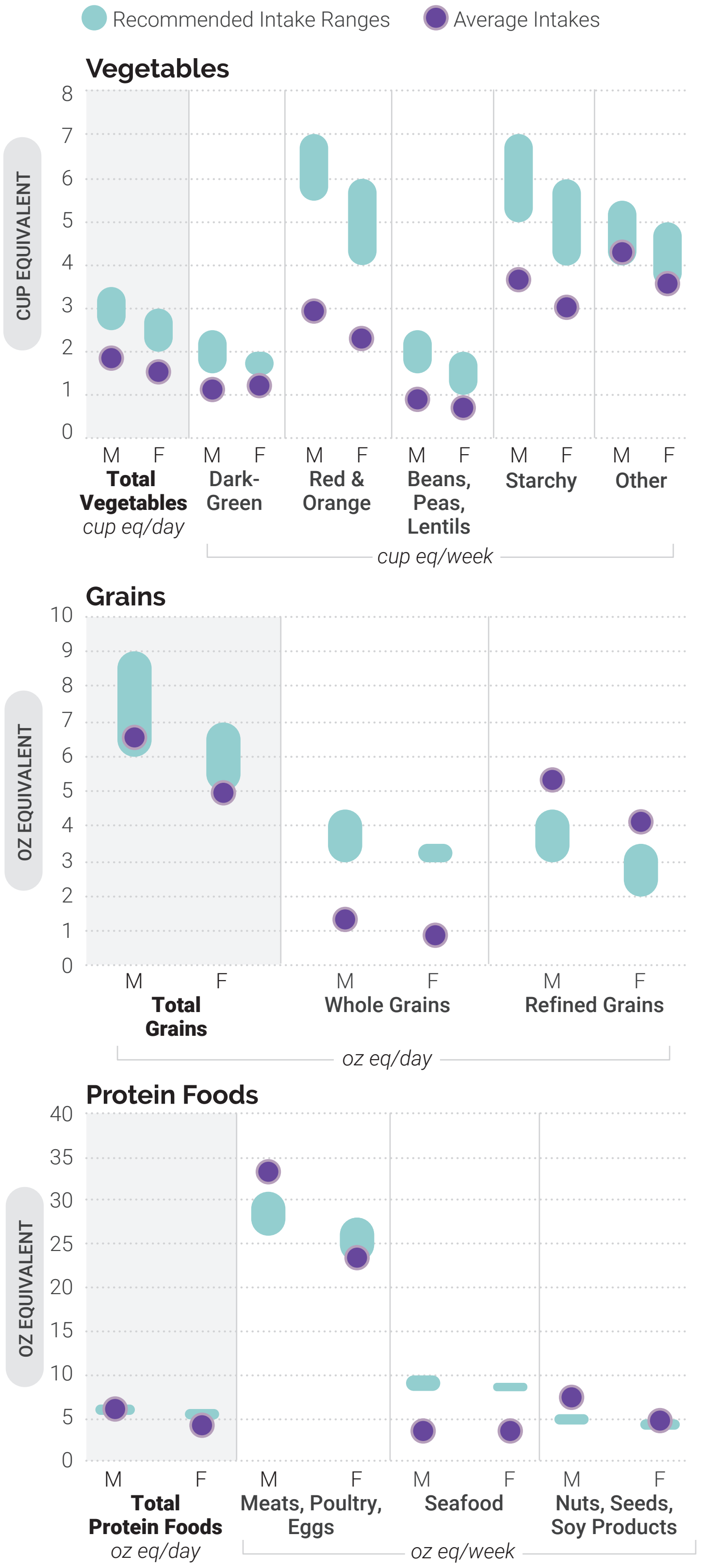
Percent Exceeding Limits of Added Sugars, Saturated Fat, and Sodium



Data Sources: *Average Intakes and HEI-2015 Scores*: Analysis of What We Eat in America, NHANES 2015-2016, day 1 dietary intake data, weighted. *Recommended Intake Ranges*: Healthy U.S.-Style Dietary Patterns (see ***Appendix 3***). *Percent Exceeding Limits*: What We Eat in America, NHANES 2013-2016, 2 days dietary intake data, weighted.

Figure 6-2

Average Intakes of Subgroups Compared to Recommended Intake Ranges: Ages 60 and Older



Average intakes compared to recommended intake ranges of the subgroups for grains are represented in daily amounts; subgroups for vegetables and protein foods are represented in weekly amounts in **Figure 6-2**.

Diet quality is highest among older adults compared to other ages. Consistent with the general U.S. population, however, this age group is not meeting the recommendations for food group and nutrient intakes and has a Healthy Eating Index score of 63 out of 100. Older adults can improve dietary intake by increasing consumption of fruit, vegetables, whole grains, and dairy, while ensuring protein intake meets recommendations. Reducing intakes of added sugars, saturated fat, and sodium also will help older adults achieve recommendations and manage and avoid chronic conditions (**Figure 6-1**). Older adults should choose nutrient-dense options within each food group and consume appropriate portion sizes because calorie needs decline with age.

Data Sources: *Average Intakes*: Analysis of What We Eat in America, NHANES 2015-2016, day 1 dietary intake data, weighted. *Recommended Intake Ranges*: Healthy U.S.-Style Dietary Patterns (see ***Appendix 3***).

Special Considerations

The nutrition considerations for the general U.S. population described in ***Chapter 1***. apply to older adults. For example, the nutrients of public concern—calcium, vitamin D, potassium, and dietary fiber—apply to this age group as well. However, this age group also has some special nutrition considerations that are discussed in the following sections of this chapter. For example, several additional nutrients are more likely to be underconsumed during this life stage. These include dietary protein and vitamin B_{12}. Beverage intake, particularly as it relates to hydration status, also is an area of special consideration.

Protein

Consuming enough protein is important to prevent the loss of lean muscle mass that occurs naturally with age. Monitoring protein intake is especially important as older adults transition through this life stage. Intake patterns show average intakes of protein foods is lower for individuals ages 71 and older compared to adults ages 60 through 70. About 50 percent of women and 30 percent of men 71 and older fall short of protein foods recommendations.

The majority of protein in the Healthy U.S.-Style Dietary Pattern is accounted for in the protein foods subgroups: seafood; meats, poultry and eggs; nuts, seeds, and soy products; and the vegetable subgroup of beans, peas, and lentils, which also is considered a protein foods subgroup. The dairy and fortified soy alternatives food group is another source of dietary protein. Most older adults are meeting or exceeding weekly recommendations for meats, poultry, and eggs, making this subgroup a common source of protein foods for older adults (**Table 6-1**). However, seafood, dairy and fortified soy alternatives, and beans, peas, and lentils are underconsumed, yet provide important nutrients that support healthy dietary patterns. For example, the dairy food group provides calcium, vitamin D, and vitamin B_{12} and the beans, peas, and lentils subgroup provides dietary fiber. Many choices within the seafood subgroup also provide vitamins D and B_{12} and calcium (if eaten with bones), and beneficial fatty acids. Food sources of calcium, vitamin D, and dietary fiber are available at **DietaryGuidelines.gov**.

Many older adults can improve their dietary pattern and better meet nutrient needs by choosing from a wider variety of protein sources. In some cases, this may mean using seafood more often in place of meats, poultry, or eggs or using beans, peas, and lentils in mixed dishes, such as soups, rice, or pasta dishes. For others, it may mean maintaining current intakes of protein and finding enjoyable ways to add protein foods from underconsumed food groups and subgroups in order to ensure that overall protein needs are met.

Vitamin B_{12}

Vitamin B_{12} is of concern for some older adults because the ability to absorb this nutrient can decrease with age and use of certain medications can decrease absorption. Older adults are encouraged to meet the recommendations for protein foods, a common source of vitamin B_{12}, and include foods fortified with vitamin B_{12}, such as breakfast cereals. Some individuals also may require vitamin B_{12} dietary supplements. Individuals are encouraged to speak with their healthcare provider to determine what, if any, supplementation is appropriate.

Dietary Supplements

Many adults in the United States take one or more dietary supplements either as a pill or drink. Popular supplements include some nutrients that are underconsumed among older adults, including calcium and vitamins D and B_{12}. All sources of a nutrient or food component—whether from food or a dietary supplement—should be considered when assessing an individual's dietary pattern, including any added sugars that may come from supplement drinks. Older adults should track and discuss all dietary supplement use with their healthcare provider. Beverage supplements should not replace regular food intake unless instructed by a health professional. The National Institutes of Health, Office of Dietary Supplements provides the **My Dietary Supplement and Medicine Record**[1], to help individuals track supplement and medicine use.

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[1] Available at: **ods.od.nih.gov/pubs/DietarySupplementandMedicineRecord.pdf**

Beverages

Many older adults do not drink enough fluids to stay hydrated. One reason for this is that the sensation of thirst tends to decline with age. Concerns about bladder control or issues with mobility also may hinder intake of fluids among older adults. Mean intakes of beverages show adults ages 60 and older consume significantly fewer fluid ounces across all beverage types compared to adults ages 59 and under—about 2 fewer cups per day, most of which is due to drinking less water.

It is important that older adults drink plenty of water to prevent dehydration and aid in the digestion of food and absorption of nutrients. In addition to water, choosing unsweetened beverages such as 100% fruit or vegetable juice and low-fat or fat-free milk or fortified soy beverage can support fluid intake to prevent dehydration while helping to achieve food group recommendations. The water that is contained in foods, such as fruits, vegetables, and soups, contributes to hydration status and is a contributor to total fluid intake.

ALCOHOLIC BEVERAGES

The *Dietary Guidelines* do not recommend initiating alcohol consumption for any reason. To help older adults move toward a healthy dietary pattern and minimize risks associated with drinking, older adults can choose not to drink or drink in moderation—limiting intakes to 2 drinks or less in a day for men and 1 drink or less in a day for women, when alcohol is consumed. Older adults who choose to drink may experience the effects of alcohol more quickly than they did when they were younger. This puts older adults at higher risk of falls, car crashes, and other injuries that may result from drinking. In addition, older adults tend to have a greater number of comorbid health conditions than younger adults, and alcohol use or misuse may adversely affect the condition or interfere with management of the disease. Certain older adults should avoid drinking alcohol completely, including those who:

- Plan to drive or operate machinery, or participate in activities that require skill, coordination, and alertness.
- Take certain over-the-counter or prescription medications.
- Have certain medical conditions.
- Are recovering from alcohol use disorder or are unable to control the amount they drink.
- More information on alcoholic beverages and their relationship to health is provided in ***Chapter 1***.

Supporting Healthy Eating

Similar to other life stages, older adults can be supported by professionals, family, and friends to achieve a healthy dietary pattern that accounts for factors such as cost, preferences, traditions, and access. Additional factors to consider when supporting healthy eating for older adults include:

- **Enjoyment of food:** Sharing meals with friends and family can help increase food enjoyment and promote adequacy of dietary intake for older adults.

- **Ability to chew or swallow foods:** Experimenting with the preparation of foods from all food groups can help identify textures that are acceptable, appealing, and enjoyable for adults who have difficulties chewing or swallowing. Good dental health is critical to overall health, as well as the ability to chew foods properly.

- **Food safety:** Practicing safe food handling procedures is of particular importance for older adults due to a decline in immune system function that accompanies age and that increases the risk of foodborne illness. For more information: **Foodsafety.gov** for older adults: **foodsafety.gov/people-at-risk/older-adults** or FDA: **fda.gov/media/83744/download**.

Older adults have access to a variety of Government resources to support a healthy dietary pattern as part of overall healthy aging. Professionals working with older Americans can use these resources to better support access to healthy, safe, and affordable food choices.

- **Congregate Nutrition Services:** The Older Americans Act authorizes meals and related services in congregate settings for any person age 60 and older and their spouse of any age. Program sites offer older individuals healthy meals and opportunities to socialize. Congregate meals are typically provided in senior centers, schools, churches, or other community settings.

- **Supplemental Nutrition Assistance Program (SNAP):** Older adults with limited income may qualify for SNAP, a Federal program that provides temporary benefits to help individuals purchase foods and beverages to support a healthy dietary pattern when resources are constrained.

Physical Activity and Older Adults

The benefits of regular physical activity occur throughout life and are essential for healthy aging. It is never too late to start being physically active. For older adults, regular physical activity supports a number of additional health benefits including improved cognition, balance, and bone strength. These benefits make it easier to perform activities of daily living, preserves function and mobility, and lowers the risk of falls and injuries from falls.

Adults should move more and sit less throughout the day. Some physical activity is better than none. To attain the most health benefits from physical activity, older adults need at least 150 to 300 minutes of moderate-intensity aerobic activity per week. The talk test is a good way to assess moderate intensity for older adults. A person doing moderate-intensity aerobic activity can talk, but not sing. Older adults also need muscle-strengthening activity at least 2 days each week. Older adults should incorporate multicomponent physical activity that includes balance training as well as aerobic and muscle-strengthening activities.

The U.S. Department of Health and Human Service's *Physical Activity Guidelines for Americans* and the related Move Your Way® resources have information about the benefits of physical activity and tips to get started. Available at **health.gov/paguidelines**.

- **Commodity Supplemental Food Program (CSFP):** The CSFP supplements the diets of low-income older adults by providing nutritious USDA packaged food to support a healthy dietary pattern. The CSFP is federally funded, and private and nonprofit institutions facilitate the distribution of monthly CSFP packages to eligible older adults.

- **Home-Delivered Nutrition Services:** The Older Americans Act authorizes meals and related services in a person's home for individuals ages 60 and older and their spouse of any age. Older adults who experience difficulty leaving the home due to frailty, health concerns, or certain medical conditions may benefit from home-delivered meals offered under the Older Americans Act.

- **Child and Adult Care Food Program (CACFP):** The CACFP is a Federal program that provides reimbursements for nutritious meals and snacks to older adults enrolled in daycare facilities. Older adults receiving care at nonresidential care centers may receive meals and snacks that meet nutrition standards of the CACFP.

Additional resources to support older adults exist at the community level. For example, the **Senior Farmers Market Nutrition Program (SFMNP)** provides many low-income seniors with access to fruits and vegetables grown in their local communities. **SNAP Education (SNAP-Ed)** programming may also be offered and teach older adults cooking and shopping skills. Individuals working within these settings must ensure the availability of nutrient-dense foods and assist older adults in choosing a healthy dietary pattern that fits in their cultural and food preferences.

Healthy Eating Through the Lifespan

This chapter has focused on the unique nutritional considerations of the older adult life stage. It also has reinforced the idea that the core elements of a healthy dietary pattern are remarkably consistent across the lifespan and across health outcomes. More than that, a healthy dietary pattern is flexible—people can customize the *Dietary Guidelines* recommendations to suit their personal preferences, cultural traditions, and budget considerations.

Beginning at the earliest life stage—infancy and toddlerhood—a healthy dietary pattern can help people achieve and maintain good health and reduce the risk of chronic diseases. However, it is never too late to make improvements. People at any stage of life can benefit by changing to nutrient-dense forms of foods and beverages across all food groups, in recommended amounts, and within calorie limits. **The bottom line: For lifelong good health, make every bite count with the *Dietary Guidelines for Americans*!**

Appendix 1:

Nutritional Goals[a] for Age-Sex Groups

Table A1-1

Daily Nutritional Goals, Ages 6 Through 11 Months and 12 Through 23 Months

Nutrient	6 Through 11 Months		12 Through 23 Months	
	Goal	Source of Goal[b]	Goal	Source of Goal[b]
Macronutrients				
Protein (g)	11	RDA	13	RDA
Carbohydrate (g)	95	AI	130	RDA
Fiber, total dietary (g)	n/a[d]	n/a[d]	19	AI
Total lipid (% kcal)	n/a[d]	n/a[d]	30-40	AMDR
18:2 Linoleic acid (g)	4.6	AI	7	AI
18:3 Linolenic acid (g)	0.5	AI	0.7	AI
Minerals				
Calcium (mg)	260	AI	700	RDA
Iron (mg)	11	RDA	7	RDA
Magnesium (mg)	75	AI	80	RDA
Phosphorus (mg)	275	AI	460	RDA
Potassium (mg)	860	AI	2,000	AI
Sodium (mg)	370	AI	1,200	CDRR
Zinc (mg)	3	RDA	3	RDA
Vitamins				
Vitamin A (mcg RAE[c])	500	AI	300	RDA
Vitamin E (mg AT[c])	5	AI	6	RDA
Vitamin D (IU[c])	400	AI	600	RDA
Vitamin C (mg)	50	AI	15	RDA
Thiamin (mg)	0.3	AI	0.5	RDA
Riboflavin (mg)	0.4	AI	0.5	RDA
Niacin (mg)	4	AI	6	RDA

Table A1-1 (continued)

Daily Nutritional Goals, Ages 6 Through 11 Months and 12 Through 23 Months

Nutrient	6 Through 11 Months		12 Through 23 Months	
	Goal	Source of Goal[b]	Goal	Source of Goal[b]
Vitamin B-6 (mg)	0.3	AI	0.5	RDA
Vitamin B-12 (mcg)	0.5	AI	0.9	RDA
Choline (mg)	150	AI	200	AI
Vitamin K (mcg)	2.5	AI	30	AI
Folate (mcg DFE[c])	80	AI	150	RDA

[a] Goals reflect Dietary Reference Intakes developed for 7 to 12 months or 6 to 12 months applied to ages 6 to 12 months and DRIs for 1 to 3 years applied to 12 to 24 months.

[b] AI = Adequate Intake, CDRR = Chronic Disease Risk Reduction Level, RDA = Recommended Dietary Allowance.

[c] AT = alpha-tocopherol, DFE = Dietary Folate Equivalent, IU = International Units, RAE = Retinol Activity Equivalents.

[d] n/a = not applicable to this age group.

Sources: Institute of Medicine. *Dietary Reference Intakes: The Essential Guide to Nutrient Requirements.* Washington, DC: The National Academies Press; 2006. Institute of Medicine. *Dietary Reference Intakes for Calcium and Vitamin D.* Washington, DC: The National Academies Press; 2011. National Academies of Sciences, Engineering, and Medicine. *Dietary Reference Intakes for Sodium and Potassium.* Washington, DC: The National Academies Press; 2019.

Table A1-2

Daily Nutritional Goals, Ages 2 and Older

MACRONUTRIENTS, MINERALS & VITAMINS		Age-Sex Groups												
		M/F 2-3	**F 4-8**	**F 9-13**	**F 14-18**	**F 19-30**	**F 31-50**	**F 51+**	**M 4-8**	**M 9-13**	**M 14-18**	**M 19-30**	**M 31-50**	**M 51+**
Calorie Level Assessed	**Source of Goal**[a]	1,000	1,200	1,600	1,800	2,000	1,800	1,600	1,400	1,800	2,200	2,400	2,200	2,000
Macronutrients														
Protein (% kcal)	AMDR	5-20	10-30	10-30	10-30	10-35	10-35	10-35	10-30	10-30	10-30	10-35	10-35	10-35
Protein (g)	RDA	13	19	34	46	46	46	46	19	34	52	56	56	56
Carbohydrate (% kcal)	AMDR	45-65	45-65	45-65	45-65	45-65	45-65	45-65	45-65	45-65	45-65	45-65	45-65	45-65
Carbohydrate (g)	RDA	130	130	130	130	130	130	130	130	130	130	130	130	130
Fiber (g)	14g/ 1,000 kcal	14	17	22	25	28	25	22	20	25	31	34	31	28
Added Sugars (% kcal)	DGA	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Total lipid (% kcal)	AMDR	30-40	25-35	25-35	25-35	20-35	20-35	20-35	25-35	25-35	25-35	20-35	20-35	20-35
Saturated Fatty Acids (% kcal)	DGA	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
18:2 Linoleic acid (g)	AI	7	10	10	11	12	12	11	10	12	16	17	17	14
18:3 Linoleic acid (g)	AI	0.7	0.9	1.0	1.1	1.1	1.1	1.1	0.9	1.2	1.6	1.6	1.6	1.6
Minerals														
Calcium (mg)	RDA	700	1,000	1,300	1,300	1,000	1,000	1,200	1,000	1,300	1,300	1,000	1,000	1,000[b]
Iron (mg)	RDA	7	10	8	15	18	18	8	10	8	11	8	8	8
Magnesium (mg)	RDA	80	130	240	360	310	320	320	130	240	410	400	420	420
Phosphorus (mg)	RDA	460	500	1,250	1,250	700	700	700	500	1,250	1,250	700	700	700
Potassium (mg)	AI	2,000	2,300	2,300	2,300	2,600	2,600	2,600	2,300	2,500	3,000	3,400	3,400	3,400
Sodium (mg)	CDRR	1,200	1,500	1,800	2,300	2,300	2,300	2,300	1,500	1,800	2,300	2,300	2,300	2,300
Zinc (mg)	RDA	3	5	8	9	8	8	8	5	8	11	11	11	11

Table A1-2 (continued)

Daily Nutritional Goals, Ages 2 and Older

MACRONUTRIENTS, MINERALS & VITAMINS		Age-Sex Groups												
		M/F 2-3	F 4-8	F 9-13	F 14-18	F 19-30	F 31-50	F 51+	M 4-8	M 9-13	M 14-18	M 19-30	M 31-50	M 51+
Calorie Level Assessed	**Source of Goal**[a]	1,000	1,200	1,600	1,800	2,000	1,800	1,600	1,400	1,800	2,200	2,400	2,200	2,000
Vitamins														
Vitamin A (mcg RAE[d]**)**	RDA	300	400	600	700	700	700	700	400	600	900	900	900	900
Vitamin E (mg AT[d]**)**	RDA	6	7	11	15	15	15	15	7	11	15	15	15	15
Vitamin D (IU[d]**)**	RDA	600	600	600	600	600	600	600[c]	600	600	600	600	600	600[c]
Vitamin C (mg)	RDA	15	25	45	65	75	75	75	25	45	75	90	90	90
Thiamin (mg)	RDA	0.5	0.6	0.9	1.0	1.1	1.1	1.1	0.6	0.9	1.2	1.2	1.2	1.2
Riboflavin (mg)	RDA	0.5	0.6	0.9	1.0	1.1	1.1	1.1	0.6	0.9	1.3	1.3	1.3	1.3
Niacin (mg)	RDA	6	8	12	14	14	14	14	8	12	16	16	16	16
Vitamin B-6 (mg)	RDA	0.5	0.6	1.0	1.2	1.3	1.3	1.5	0.6	1.0	1.3	1.3	1.3	1.7
Vitamin B-12 (mcg)	RDA	0.9	1.2	1.8	2.4	2.4	2.4	2.4	1.2	1.8	2.4	2.4	2.4	2.4
Choline (mg)	AI	200	250	375	400	425	425	425	250	375	550	550	550	550
Vitamin K (mcg)	AI	30	55	60	75	90	90	90	55	60	75	120	120	120
Folate (mcg DFE[d]**)**	RDA	150	200	300	400	400	400	400	200	300	400	400	400	400

[a] AI = Adequate Intake, CDRR = Chronic Disease Risk Reduction Level, DGA = *Dietary Guidelines for Americans, 2020-2025* , RDA = Recommended Dietary Allowance.

[b] Calcium RDA for males ages 71+ years is 1,200 mg.

[c] Vitamin D RDA for males and females ages 71+ years is 800 IU.

[d] AT = alpha-tocopherol, DFE = Dietary Folate Equivalent, IU = International Units, RAE = Retinol Activity Equivalents.

Sources: Institute of Medicine. *Dietary Reference Intakes: The Essential Guide to Nutrient Requirements.* Washington, DC: The National Academies Press; 2006. Institute of Medicine. *Dietary Reference Intakes for Calcium and Vitamin D.* Washington, DC: The National Academies Press; 2011. National Academies of Sciences, Engineering, and Medicine. *Dietary Reference Intakes for Sodium and Potassium.* Washington, DC: The National Academies Press; 2019.

Table A1-3

Daily Nutritional Goals for Women Who Are Pregnant, by Age Group and Trimester

MACRONUTRIENTS, MINERALS & VITAMINS		Age Group (Years)								
		14-18			19-30			31-50		
		Trimester								
		1st	2nd	3rd	1st	2nd	3rd	1st	2nd	3rd
Calorie Level Assessed	**Source of Goal[a]**	1,800	2,200	2,400	2,000	2,400	2,600	1,800	2,200	2,400
Macronutrients										
Protein (% kcal)	AMDR	10-30	10-30	10-30	10-35	10-35	10-35	10-35	10-35	10-35
Protein (g)	RDA	71	71	71	71	71	71	71	71	71
Carbohydrate (%kcal)	AMDR	45-65	45-65	45-65	45-65	45-65	45-65	45-65	45-65	45-65
Carbohydrate (g)	RDA	175	175	175	175	175	175	175	175	175
Fiber (g)	14g/ 1,000 kcal	25	31	34	28	34	36	25	31	34
Added Sugars (% kcal)	DGA	<10	<10	<10	<10	<10	<10	<10	<10	<10
Total lipid (% kcal)	AMDR	25-35	25-35	25-35	20-35	20-35	20-35	20-35	20-35	20-35
Saturated Fatty Acids (% kcal)	DGA	<10	<10	<10	<10	<10	<10	<10	<10	<10
18:2 Linoleic acid (g)	AI	13	13	13	13	13	13	13	13	13
18:3 Linolenic acid (g)	AI	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
Minerals										
Calcium (mg)	RDA	1,300	1,300	1,300	1,000	1,000	1,000	1,000	1,000	1,000
Iron (mg)	RDA	27	27	27	27	27	27	27	27	27
Magnesium (mg)	RDA	400	400	400	350	350	350	360	360	360
Phosphorus (mg)	RDA	1,250	1,250	1,250	700	700	700	700	700	700
Potassium (mg)	AI	2,600	2,600	2,600	2,900	2,900	2,900	2,900	2,900	2,900
Sodium (mg)	CDRR	2,300	2,300	2,300	2,300	2,300	2,300	2,300	2,300	2,300
Zinc (mg)	RDA	12	12	12	11	11	11	11	11	11
Iodine (mcg)	RDA	220	220	220	220	220	220	220	220	220
Vitamins										
Vitamin A (mcg RAE[b])	RDA	750	750	750	770	770	770	770	770	770
Vitamin E (mg AT[b])	RDA	15	15	15	15	15	15	15	15	15
Vitamin D (IU[b])	RDA	600	600	600	600	600	600	600	600	600

Table A1-3 (continued)

Daily Nutritional Goals for Women Who Are Pregnant, by Age Group and Trimester

MACRONUTRIENTS, MINERALS & VITAMINS		Age Group (Years)								
		14-18			19-30			31-50		
		Trimester								
		1st	2nd	3rd	1st	2nd	3rd	1st	2nd	3rd
Calorie Level Assessed	**Source of Goal**[a]	1,800	2,200	2,400	2,000	2,400	2,600	1,800	2,200	2,400
Vitamins										
Vitamin C (mg)	RDA	80	80	80	85	85	85	85	85	85
Thiamin (mg)	RDA	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
Riboflavin (mg)	RDA	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
Niacin (mg)	RDA	18	18	18	18	18	18	18	18	18
Vitamin B-6 (mg)	RDA	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
Vitamin B-12 (mcg)	RDA	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Choline (mg)	AI	450	450	450	450	450	450	450	450	450
Vitamin K (mcg)	AI	75	75	75	90	90	90	90	90	90
Folate (mcg DFE[b]**)**	RDA	600	600	600	600	600	600	600	600	600

[a] AI = Adequate Intake, CDRR = Chronic Disease Risk Reduction Level, DGA = *Dietary Guidelines for Americans, 2020-2025* , RDA = Recommended Dietary Allowance.

[b] AT = alpha-tocopherol, DFE = Dietary Folate Equivalent, IU= International Units, RAE = Retinol Activity Equivalents.

Sources: Institute of Medicine. *Dietary Reference Intakes: The Essential Guide to Nutrient Requirements.* Washington, DC: The National Academies Press; 2006. Institute of Medicine. *Dietary Reference Intakes for Calcium and Vitamin D.* Washington, DC: The National Academies Press; 2011. National Academies of Sciences, Engineering, and Medicine. *Dietary Reference Intakes for Sodium and Potassium.* Washington, DC: The National Academies Press; 2019.

Table A1-4

Daily Nutritional Goals for Women Who Are Lactating, by Age Group and Months Postpartum

MACRONUTRIENTS, MINERALS & VITAMINS		Age Group (Years)					
		14-18		19-30		31-50	
		Months Postpartum					
		0-6	7-12	0-6	7-12	0-6	7-12
Calorie Level Assessed	**Source of Goal**[a]	2,200	2,200	2,400	2,400	2,200	2,200
Macronutrients							
Protein (% kcal)	AMDR	10-30	10-30	10-35	10-35	10-35	10-35
Protein (g)	RDA	71	71	71	71	71	71
Carbohydrate (% kcal)	AMDR	45-65	45-65	45-65	45-65	45-65	45-65
Carbohydrate (g)	RDA	210	210	210	210	210	210
Fiber (g)	14g/1,000kcal	31	31	34	34	31	31
Added sugars (% kcals)	DGA	<10	<10	<10	<10	<10	<10
Total lipid (% kcal)	AMDR	25-35	25-35	20-35	20-35	20-35	20-35
Saturated Fatty Acids (% kcal)	DGA	<10	<10	<10	<10	<10	<10
18:2 Linoleic acid (g)	AI	13	13	13	13	13	13
18:3 Linolenic acid (g)	AI	1.3	1.3	1.3	1.3	1.3	1.3
Minerals							
Calcium (mg)	RDA	1,300	1,300	1,000	1,000	1,000	1,000
Iron (mg)	RDA	10	10	9	9	9	9
Magnesium (mg)	RDA	360	360	310	310	320	320
Phosphorus (mg)	RDA	1,250	1,250	700	700	700	700
Potassium (mg)	AI	2,500	2,500	2,800	2,800	2,800	2,800
Sodium (mg)	CDRR	2,300	2,300	2,300	2,300	2,300	2,300
Zinc (mg)	RDA	13	13	12	12	12	12
Iodine (mcg)	RDA	290	290	290	290	290	290

Table A1-4 (continued)

Daily Nutritional Goals for Women Who Are Lactating, by Age Group and Months Postpartum

MACRONUTRIENTS, MINERALS & VITAMINS		Age Group (Years)					
		14-18		19-30		31-50	
		Months Postpartum					
		0-6	7-12	0-6	7-12	0-6	7-12
Calorie Level Assessed	**Source of Goal**[a]	2,200	2,200	2,400	2,400	2,200	2,200
Vitamins							
Vitamin A (mcg RAE[b])	RDA	1,200	1,200	1,300	1,300	1,300	1,300
Vitamin E (mg AT[b])	RDA	19	19	19	19	19	19
Vitamin D (IU[b])	RDA	600	600	600	600	600	600
Vitamin C (mg)	RDA	115	115	120	120	120	120
Thiamin (mg)	RDA	1.4	1.4	1.4	1.4	1.4	1.4
Riboflavin (mg)	RDA	1.6	1.6	1.6	1.6	1.6	1.6
Niacin (mg)	RDA	17	17	17	17	17	17
Vitamin B-6 (mg)	RDA	2	2	2	2	2	2
Vitamin B-12 (mcg)	RDA	2.8	2.8	2.8	2.8	2.8	2.8
Choline (mg)	AI	550	550	550	550	550	550
Vitamin K (mcg)	AI	75	75	90	90	90	90
Folate (mcg DFE[b])	RDA	500	500	500	500	500	500

[a] AI = Adequate Intake, CDRR = Chronic Disease Risk Reduction Level, DGA = *Dietary Guidelines for Americans, 2020-2025* , RDA = Recommended Dietary Allowance.

[b] AT = alpha-tocopherol, DFE = Dietary Folate Equivalent, IU= International Units, RAE = Retinal Activity Equivalents.

Sources: Institute of Medicine. *Dietary Reference Intakes: The Essential Guide to Nutrient Requirements.* Washington, DC: The National Academies Press; 2006. Institute of Medicine. *Dietary Reference Intakes for Calcium and Vitamin D.* Washington, DC: The National Academies Press; 2011. National Academies of Sciences, Engineering, and Medicine. *Dietary Reference Intakes for Sodium and Potassium.* Washington, DC: The National Academies Press; 2019.

Appendix 2:

Estimated Calorie Needs

The total number of calories a person needs each day varies depending on the person's age, sex, height, weight, and level of physical activity. In addition, a need to lose, maintain, or gain weight, and other factors affect how many calories should be consumed. Estimated amounts of calories needed to maintain energy balance for various age and sex groups at three different levels of physical activity are provided in **Table A2-1** for toddlers ages 12 through 23 months and **Table A2-2** for ages 2 and older. These estimates are based on the Estimated Energy Requirements (EER) equations, using reference heights (average) and reference weights (healthy) for each age-sex group. For toddlers, children, and adolescents, reference height and weight vary by age. For adults, the reference man is 5 feet 10 inches tall and weighs 154 pounds. The reference woman is 5 feet 4 inches tall and weighs 126 pounds.

Estimates range from 700 to 1,000 calories for toddlers ages 12 through 23 months. Estimated needs for young children ages 2 through 8 range from 1,000 to 2,000 calories. A wider range of 1,400 to 3,200 calories is estimated for older children and adolescents, with males generally having higher calorie needs than females.

Adult estimated calorie needs range from 1,600 to 2,400 calories per day for females and 2,000 to 3,000 calories per day for males. As shown, males generally require more calories than females. Due to reductions in basal metabolic rate that occur with aging, calorie needs generally decrease for adults as they age.

Estimated calorie needs during the first trimester of pregnancy generally do not increase compared to prepregnancy needs. Additional calories needed for the later trimesters of pregnancy and during lactation are outlined in **Table A2-3** and include approximately 300 to 400 additional calories. It is recommended that women follow their healthcare provider's guidance regarding appropriate caloric intake during pregnancy as many factors, including prepregnancy weight status, gestational weight gain, and multiple pregnancies, may affect calorie needs. Women with overweight or obesity have lower recommended gestational weight gain during pregnancy, which may affect calorie needs.

These calorie needs are only estimates, and approximations of individual calorie needs can be determined with online tools. The DRI Calculator for Healthcare Professionals, available at **nal.usda.gov/fnic/dri-calculator**, can be used to estimate calorie needs based on age, sex, height, weight, activity level, and pregnancy or lactation status.

Table A2-1

Estimated Calorie Needs per Day, by Age and Sex, Ages 12 Through 23 Months

AGE IN MONTHS	Males	Females
12	800	800
15	900	800
18	1,000	900
21 through 23	1,000	1,000

Source: Institute of Medicine. *Dietary Reference Intakes for Energy, Carbohydrate, Fiber, Fat, Fatty Acids, Cholesterol, Protein, and Amino Acids.* Washington (DC): The National Academies Press; 2002.

Table A2-2

Estimated Calorie Needs per Day, by Age, Sex, and Physical Activity Level, Ages 2 and Older

AGE	Males			Females		
	Sedentary[a]	Moderately Active[b]	Active[c]	Sedentary[a]	Moderately Active[b]	Active[c]
2	1,000	1,000	1,000	1,000	1,000	1,000
3	1,000	1,400	1,400	1,000	1,200	1,400
4	1,200	1,400	1,600	1,200	1,400	1,400
5	1,200	1,400	1,600	1,200	1,400	1,600
6	1,400	1,600	1,800	1,200	1,400	1,600
7	1,400	1,600	1,800	1,200	1,600	1,800
8	1,400	1,600	2,000	1,400	1,600	1,800
9	1,600	1,800	2,000	1,400	1,600	1,800
10	1,600	1,800	2,200	1,400	1,800	2,000
11	1,800	2,000	2,200	1,600	1,800	2,000
12	1,800	2,200	2,400	1,600	2,000	2,200
13	2,000	2,200	2,600	1,600	2,000	2,200
14	2,000	2,400	2,800	1,800	2,000	2,400
15	2,200	2,600	3,000	1,800	2,000	2,400
16	2,400	2,800	3,200	1,800	2,000	2,400
17	2,400	2,800	3,200	1,800	2,000	2,400
18	2,400	2,800	3,200	1,800	2,000	2,400
19-20	2,600	2,800	3,000	2,000	2,200	2,400
21-25	2,400	2,800	3,000	2,000	2,200	2,400
26-30	2,400	2,600	3,000	1,800	2,000	2,400
31-35	2,400	2,600	3,000	1,800	2,000	2,200
36-40	2,400	2,600	2,800	1,800	2,000	2,200
41-45	2,200	2,600	2,800	1,800	2,000	2,200
46-50	2,200	2,400	2,800	1,800	2,000	2,200
51-55	2,200	2,400	2,800	1,600	1,800	2,200
56-60	2,200	2,400	2,600	1,600	1,800	2,200

Table A2-2 (continued)

Estimated Calorie Needs per Day, by Age, Sex, and Physical Activity Level, Ages 2 and Older

AGE	Males			Females		
	Sedentary[a]	Moderately Active[b]	Active[c]	Sedentary[a]	Moderately Active[b]	Active[c]
61-65	2,000	2,400	2,600	1,600	1,800	2,000
66-70	2,000	2,200	2,600	1,600	1,800	2,000
71-75	2,000	2,200	2,600	1,600	1,800	2,000
76 and up	2,000	2,200	2,400	1,600	1,800	2,000

[a] Sedentary means a lifestyle that includes only the physical activity of independent living.

[b] Moderately Active means a lifestyle that includes physical activity equivalent to walking about 1.5 to 3 miles per day at 3 to 4 miles per hour, in addition to the activities of independent living.

[c] Active means a lifestyle that includes physical activity equivalent to walking more than 3 miles per day at 3 to 4 miles per hour, in addition to the activities of independent living.

Source: Institute of Medicine. *Dietary Reference Intakes for Energy, Carbohydrate, Fiber, Fat, Fatty Acids, Cholesterol, Protein, and Amino Acids*. Washington (DC): The National Academies Press; 2002.

Table A2-3

Estimated Change in Calorie Needs During Pregnancy and Lactation for Women With a Healthy[a] Prepregnancy Weight

STAGE OF PREGNANCY OR LACTATION	Estimated Change in Daily Calorie Needs Compared to Prepregnancy Needs
Pregnancy: 1st trimester	+ 0 calories
Pregnancy: 2nd trimester	+ 340 calories
Pregnancy: 3rd trimester	+ 452 calories
Lactation: 1st 6 months	+ 330 calories[b]
Lactation: 2nd 6 months	+ 400 calories[c]

[a] These estimates apply to women with a healthy prepregnancy weight. Women with a prepregnancy weight that is considered overweight or obese should consult their healthcare provider for guidance regarding appropriate caloric intake during pregnancy and lactation.

[b] The EER for the first 6 months of lactation is calculated by adding 500 calories/day to prepregnancy needs to account for the energy needed for milk production during this time period, then subtracting 170 calories/day to account for weight loss in the first 6 months postpartum.

[c] The EER for the second 6 months of lactation is calculated by adding 400 calories/day to prepregnancy needs to account for the energy needed for milk production during this time period. Weight stability is assumed after 6 months postpartum.

Note: Estimates are based on Estimated Energy Requirements (EER) set by the Institute of Medicine. Source: Institute of Medicine. *Dietary Reference Intakes for Energy, Carbohydrate, Fiber, Fat, Fatty Acids, Cholesterol, Protein, and Amino Acids.* Washington, DC: The National Academies Press; 2005.

Appendix 3:

USDA Dietary Patterns

The Healthy U.S.-Style Dietary Pattern (**Tables A3-1** and **A3-2**) is based on the types and proportions of foods Americans typically consume but in nutrient-dense forms and appropriate amounts. The Healthy Vegetarian Dietary Pattern (**Tables A3-3** and **A3-4**) and the Healthy Mediterranean-Style Dietary Pattern (**Table A3-5**) are variations that also exemplify a healthy dietary pattern. For the first time, the Healthy U.S.-Style and Healthy Vegetarian Dietary Patterns are provided for toddlers ages 12 through 23 months who are no longer receiving human milk or infant formula. These patterns are designed to meet nutrient needs while not exceeding calorie requirements and while staying within limits for overconsumed dietary components, such as added sugars, saturated fat, and sodium.

The methodology used to develop and update these Patterns builds on the rich history USDA has in developing food guides. This methodology includes using current food consumption data to determine the mix and proportions of foods to include in each group. Food composition data is used to select a nutrient-dense representative for each food and calculate nutrient profiles for each food group. As would be expected, most foods in their nutrient-dense forms do contain some sodium and saturated fat. In a few cases, such as in the case of whole-wheat bread, the most appropriate representative in current Federal databases contains a small amount of added sugars. Detailed information about the representative foods, nutrient profiles, and patterns is available in the online appendix of the *Scientific Report of the 2020 Dietary Guidelines Advisory Committee.*[1]

Amounts of each food group and subgroup within the patterns are based on nutrient and *Dietary Guidelines* standards (see ***Appendix 1. Nutritional Goals for Age-Sex Groups***). Standards for nutrient adequacy aim to meet the Recommended Dietary Allowances (RDA), which are designed to cover the needs of 97 percent of the population, and Adequate Intakes (AI), which are used when an average nutrient requirement cannot be determined. The Patterns meet these standards for almost all nutrients. For a few nutrients (vitamin D and vitamin E for all ages, and choline for ages 2 and older), amounts in the Patterns are marginal or below the RDA or AI standard for many or all age/sex groups. In most cases, an intake of these nutrients below the RDA or AI is not considered to be of public health concern. For more information on dietary components of public health concern, see ***Chapter 1***.

The Patterns have 12 calorie levels to meet the needs of individuals across the lifespan ages 2 and older. For toddlers ages 12 through 23 months, who are no longer receiving either human milk or infant formula, the Patterns are provided at 4 calorie levels. ***Chapters 2***, ***3***, ***4***, ***5***, and ***6*** describe healthy dietary patterns and relevant calorie levels for each life stage. To follow these Patterns, identify the appropriate calorie level, choose a variety of foods in each group and subgroup over time in recommended amounts, and limit choices that are not in nutrient-dense forms so that the overall calorie limit is not exceeded.

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[1] Available at: **dietaryguidelines.gov/2020-advisory-committee-report/food-pattern-modeling**

Table A3-1

Healthy U.S.-Style Dietary Pattern for Toddlers Ages 12 Through 23 Months Who Are No Longer Receiving Human Milk or Infant Formula, With Daily or Weekly Amounts From Food Groups, Subgroups, and Components

CALORIE LEVEL OF PATTERN[a]	700	800	900	1,000
FOOD GROUP OR SUBGROUP[b,c]	**Daily Amount of Food From Each Group**[d] (Vegetable and protein foods subgroup amounts are per week.)			
Vegetables (cup eq/day)	**⅔**	**¾**	**1**	**1**
	Vegetable Subgroups in Weekly Amounts			
Dark-Green Vegetables (cup eq/wk)	1	⅓	½	½
Red and Orange Vegetables (cup eq/wk)	1	1 ¾	2 ½	2 ½
Beans, Peas, Lentils (cup eq/wk)	¾	⅓	½	½
Starchy Vegetables (cup eq/wk)	1	1 ½	2	2
Other Vegetables (cup eq/wk)	¾	1 ¼	1 ½	1 ½
Fruits (cup eq/day)	**½**	**¾**	**1**	**1**
Grains (ounce eq/day)	**1 ¾**	**2 ¼**	**2 ½**	**3**
Whole Grains (ounce eq/day)	1 ½	2	2	2
Refined Grains (ounce eq/day)	¼	¼	½	1
Dairy (cup eq/day)	**1 ⅔**	**1 ¾**	**2**	**2**
Protein Foods (ounce eq/day)	**2**	**2**	**2**	**2**
	Protein Foods Subgroups in Weekly Amounts			
Meats, Poultry (ounce eq/wk)	8 ¾	7	7	7 ¾
Eggs (ounce eq/wk)	2	2 ¾	2 ¼	2 ¼
Seafood (ounce eq/wk)[e]	2-3	2-3	2-3	2-3
Nuts, Seeds, Soy Products (ounce eq/wk)	1	1	1 ¼	1 ¼
Oils (grams/day)	**9**	**9**	**8**	**13**

[a] Calorie level ranges: Energy levels are calculated based on median length and body weight reference individuals. Calorie needs vary based on many factors. The DRI Calculator for Healthcare Professionals available at **nal.usda.gov/fnic/dri-calculator/** can be used to estimate calorie needs based on age, sex, and weight.

[b] Definitions for each food group and subgroup and quantity (i.e., cup or ounce equivalents) are provided in ***Chapter 1*** and are compiled in **Table A3-2 (footnote c).**

[c] All foods are assumed to be in nutrient-dense forms and prepared with minimal added sugars, refined starches (which are a source of calories but few or no other nutrients), or sodium. Food are also lean or in low-fat forms with the exception of dairy, which includes whole-fat fluid milk, reduced-fat plain yogurts, and reduced-fat cheese. There are no calories available for additional added sugars, saturated fat, or to eat more than the recommended amount of food in a food group.

[d] In some cases, food subgroup amounts are greatest at the lower calorie levels to help achieve nutrient adequacy when relatively small number of calories are required.

[e] **If consuming up to 2 ounces of seafood per week**, children should only be fed cooked varieties from the "Best Choices" list in the U.S. Food and Drug Administration (FDA) and the U.S. Environmental Protection Agency (EPA) joint "Advice About Eating Fish," available at **FDA.gov/fishadvice** and **EPA.gov/fishadvice**. **If consuming up to 3 ounces of seafood per week**, children should only be fed cooked varieties from the "Best Choices" list that contain even lower methylmercury: flatfish (e.g., flounder), salmon, tilapia, shrimp, catfish, crab, trout, haddock, oysters,

Table A3-1 Footnotes (continued)

sardines, squid, pollock, anchovies, crawfish, mullet, scallops, whiting, clams, shad, and Atlantic mackerel. If consuming up to 3 ounces of seafood per week, many commonly consumed varieties of seafood should be avoided because they cannot be consumed at 3 ounces per week by children without the potential of exceeding safe methylmercury limits; examples that should not be consumed include: canned light tuna or white (albacore) tuna, cod, perch, black sea bass. For a complete list please see: **FDA.gov/fishadvice** and **EPA.gov/fishadvice**.

Table A3-2

Healthy U.S.-Style Dietary Pattern for Ages 2 and Older, With Daily or Weekly Amounts From Food Groups, Subgroups, and Components

CALORIE LEVEL OF PATTERN[a]	1,000	1,200	1,400	1,600	1,800	2,000	2,200	2,400	2,600	2,800	3,000	3,200
FOOD GROUP OR SUBGROUP[b]	**Daily Amount[c] of Food From Each Group** (Vegetable and protein foods subgroup amounts are per week.)											
Vegetables (cup eq/day)	**1**	**1 ½**	**1 ½**	**2**	**2 ½**	**2 ½**	**3**	**3**	**3 ½**	**3 ½**	**4**	**4**
	Vegetable Subgroups in Weekly Amounts											
Dark-Green Vegetables (cup eq/wk)	½	1	1	1 ½	1 ½	1 ½	2	2	2 ½	2 ½	2 ½	2 ½
Red and Orange Vegetables (cup eq/wk)	2 ½	3	3	4	5 ½	5 ½	6	6	7	7	7½	7½
Beans, Peas, Lentils (cup eq/wk)	½	½	½	1	1½	1½	2	2	2 ½	2 ½	3	3
Starchy Vegetables (cup eq/wk)	2	3 ½	3 ½	4	5	5	6	6	7	7	8	8
Other Vegetables (cup eq/wk)	1 ½	2 ½	2 ½	3 ½	4	4	5	5	5 ½	5 ½	7	7
Fruits (cup eq/day)	**1**	**1**	**1 ½**	**1 ½**	**1 ½**	**2**	**2**	**2**	**2**	**2 ½**	**2 ½**	**2 ½**
Grains (ounce eq/day)	**3**	**4**	**5**	**5**	**6**	**6**	**7**	**8**	**9**	**10**	**10**	**10**
Whole Grains (ounce eq/day)[d]	1 ½	2	2 ½	3	3	3	3 ½	4	4 ½	5	5	5
Refined Grains (ounce eq/day)	1 ½	2	2 ½	2	3	3	3 ½	4	4 ½	5	5	5
Dairy (cup eq/day)	**2**	**2 ½**	**2 ½**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**
Protein Foods (ounce eq/day)	**2**	**3**	**4**	**5**	**5**	**5 ½**	**6**	**6 ½**	**6 ½**	**7**	**7**	**7**
	Protein Foods Subgroups in Weekly Amounts											
Meats, Poultry, Eggs (ounce eq/wk)	10	14	19	23	23	26	28	31	31	33	33	33
Seafood (ounce eq/wk)[e]	2-3[f]	4	6	8	8	8	9	10	10	10	10	10
Nuts, Seeds, Soy Products (ounce eq/wk)	2	2	3	4	4	5	5	5	5	6	6	6
Oils (grams/day)	**15**	**17**	**17**	**22**	**24**	**27**	**29**	**31**	**34**	**36**	**44**	**51**
Limit on Calories for Other Uses (kcal/day)[g]	**130**	**80**	**90**	**100**	**140**	**240**	**250**	**320**	**350**	**370**	**440**	**580**
Limit on Calories for Other Uses (%/day)	13%	7%	6%	6%	8%	12%	11%	13%	13%	13%	15%	18%

[a] Patterns at 1,000, 1,200, and 1,400 kcal levels are designed to meet the nutritional needs of children ages 2 through 8 years. Patterns from 1,600 to 3,200 kcal are designed to meet the nutritional needs of children 9 years and older and adults. If a child 4 through 8 years of age needs more energy and, therefore, is following a pattern at 1,600 calories or more, his/her recommended amount from the dairy group should be 2½ cup eq per day. Amount of dairy for children ages 9 through 18 is 3 cup eq per day regardless of calorie level. The 1,000 and 1,200 kcal level patterns are not intended for children 9 and older or adults. The 1,400 kcal level is not intended for children ages 10 and older or adults.

Table A3-2 Footnotes (continued)

[b] Foods in each group and subgroup are:

Vegetables

Dark-Green Vegetables: All fresh, frozen, and canned dark-green leafy vegetables and broccoli, cooked or raw: for example, amaranth leaves, basil, beet greens, bitter melon leaves, bok choy, broccoli, chamnamul, chrysanthemum leaves, chard, cilantro, collards, cress, dandelion greens, kale, lambsquarters, mustard greens, poke greens, romaine lettuce, spinach, nettles, taro leaves, turnip greens, and watercress.

Red and Orange Vegetables: All fresh, frozen, and canned red and orange vegetables or juice, cooked or raw: for example, calabaza, carrots, red chili peppers, red or orange bell peppers, pimento/pimiento, sweet potatoes, tomatoes, 100% tomato juice, and winter squash such as acorn, butternut, kabocha, and pumpkin.

Beans, Peas, Lentils: All cooked from dry or canned beans, peas, chickpeas, and lentils: for example, black beans, black-eyed peas, bayo beans, brown beans, chickpeas (garbanzo beans), cowpeas, edamame, fava beans, kidney beans, lentils, lima beans, mung beans, navy beans, pigeon peas, pink beans, pinto beans, split peas, soybeans, and white beans. Does not include green beans or green peas.

Starchy Vegetables: All fresh, frozen, and canned starchy vegetables: for example, breadfruit, burdock root, cassava, corn, jicama, lotus root, lima beans, immature or raw (not dried) peas (e.g., cowpeas, black-eyed peas, green peas, pigeon peas), plantains, white potatoes, salsify, tapioca, taro root (dasheen or yautia), water chestnuts, yam, and yucca.

Other Vegetables: All other fresh, frozen, and canned vegetables, cooked or raw: for example, artichoke, asparagus, avocado, bamboo shoots, bean sprouts, beets, bitter melon (bitter gourd, balsam pear), broccoflower, Brussels sprouts, cabbage (green, red, napa, savoy), cactus pads (nopales), cauliflower, celeriac, celery, chayote (mirliton), chives, cucumber, eggplant, fennel bulb, garlic, ginger root, green beans, iceberg lettuce, kohlrabi, leeks, luffa (Chinese okra), mushrooms, okra, onions, peppers (chili and bell types that are not red or orange in color), radicchio, sprouted beans (e.g. sprouted mung beans), radish, rutabaga, seaweed, snow peas, summer squash, tomatillos, turnips, and winter melons.

Fruits

All fresh, frozen, canned, and dried fruits and 100% fruit juices: for example, apples, apricots, Asian pears, bananas, berries (e.g., blackberries, blueberries, cranberries, currants, dewberries, huckleberries, kiwifruit, loganberries, mulberries, raspberries, and strawberries); citrus fruit (e.g., calamondin, grapefruit, kumquats, lemons, limes, mandarin oranges, pomelos, tangerines, and tangelos); cherries, dates, figs, grapes, guava, jackfruit, lychee, mangoes, melons (e.g., cantaloupe, casaba, honeydew, and watermelon); nectarines, papaya, passion fruit, peaches, pears, persimmons, pineapple, plums, pomegranates, prunes, raisins, rhubarb, sapote, soursop, starfruit, and tamarind.

Grains

Whole Grains: All whole-grain products and whole grains used as ingredients: for example, amaranth, barley (not pearled), brown rice, buckwheat, bulgur, millet, oats, popcorn, quinoa, dark rye, triticale, whole-grain cornmeal, whole-wheat bread, whole-wheat chapati, whole-grain cereals and crackers, and wild rice.

Refined Grains: All refined-grain products and refined grains used as ingredients: for example, white breads, refined-grain cereals and crackers, corn grits, cream of rice, cream of wheat, barley (pearled), masa, pasta, and white rice. Refined-grain choices should be enriched.

Dairy

All fluid, dry, or evaporated milk, including lactose-free and lactose-reduced products and fortified soy beverages (soy milk), buttermilk, yogurt, kefir, frozen yogurt, dairy desserts, and cheeses (e.g., brie, camembert, cheddar, cottage cheese, colby, edam, feta, fontina, goat, gouda, gruyere, limburger, Mexican cheeses [queso anejo, queso asadero, queso chihuahua], monterey, mozzarella, muenster, parmesan, provolone, ricotta, and Swiss). Most choices should be fat-free or low-fat. Cream, sour cream, and cream cheese are not included due to their low calcium content.

Protein Foods

Meats, Poultry, Eggs: Meats include beef, goat, lamb, pork, and game meat (e.g., bear, bison, deer, elk, moose, opossum, rabbit, raccoon, squirrel). Poultry includes chicken, Cornish hens, dove, duck, game birds (e.g., ostrich, pheasant, and quail), goose, and turkey. Organ meats include brain, chitterlings, giblets, gizzard, heart, kidney, liver, stomach, sweetbreads, tongue, and tripe. Eggs include chicken eggs and other birds' eggs. Meats and poultry should be lean or low-fat.

Seafood: Seafood examples that are lower in methylmercury include: anchovy, black sea bass, catfish, clams, cod, crab, crawfish, flounder, haddock, hake, herring, lobster, mackerel, mullet, oyster, perch, pollock, salmon, sardine, scallop, shrimp, sole, squid, tilapia, freshwater trout, light tuna, and whiting.

Nuts, Seeds, Soy Products: Nuts and seeds include all nuts (tree nuts and peanuts), nut butters, seeds (e.g., chia, flax, pumpkin, sesame, and sunflower), and seed butters (e.g., sesame or tahini and sunflower). Soy includes tofu, tempeh, and products made from soy flour, soy protein isolate, and soy concentrate. Nuts should be unsalted.

Beans, Peas, Lentils: Can be considered part of the protein foods group as well as the vegetable group, but should be counted in one group only.

[c] Food group amounts shown in cup equivalents (cup eq) or ounce equivalents (ounce eq). Oils are shown in grams. Quantity equivalents for each food group are:

Vegetables, Fruits (1 cup eq): 1 cup raw or cooked vegetable or fruit; 1 cup vegetable or fruit juice; 2 cups leafy salad greens; ½ cup dried fruit or vegetable.

Grains (1 ounce eq): ½ cup cooked rice, pasta, or cereal; 1 ounce dry pasta or rice; 1 medium (1 ounce) slice bread, tortilla, or flatbread; 1 ounce of ready-to-eat cereal (about 1 cup of flaked cereal).

Dairy (1 cup eq): 1 cup milk, yogurt, or fortified soymilk; 1½ ounces natural cheese such as cheddar cheese or 2 ounces of processed cheese.

Protein Foods (1 ounce eq): 1 ounce lean meats, poultry, or seafood; 1 egg; ¼ cup cooked beans or tofu; 1 tbsp nut or seed butter; ½ ounce nuts or seeds.

[d] Amounts of whole grains in the Patterns for children are less than the minimum of 3 ounce-eq in all Patterns recommended for adults.

[e] The U.S. Food and Drug Administration (FDA) and the U.S. Environmental Protection Agency (EPA) provide joint advice regarding seafood consumption to limit methylmercury exposure for women who might become or are pregnant or breastfeeding, and children. Depending on body weight, some women and many children should choose seafood lowest in methylmercury or eat less seafood than the amounts in the Healthy US-Style Eating Pattern. For more information, see the FDA and EPA websites **FDA.gov/fishadvice**; **EPA.gov/fishadvice**.

[f] **If consuming up to 2 ounces of seafood per week**, children should only be fed cooked varieties from the "Best Choices" list in the FDA/EPA joint "Advice About Eating Fish," available at **FDA.gov/fishadvice** and **EPA.gov/fishadvice**. **If consuming up to 3 ounces of seafood per week**, children should only be fed cooked varieties from the "Best Choices" list that contain even lower methylmercury: flatfish (e.g., flounder), salmon, tilapia, shrimp, catfish, crab, trout, haddock, oysters, sardines, squid, pollock, anchovies, crawfish, mullet, scallops, whiting, clams, shad, and Atlantic mackerel. If consuming up to 3 ounces of seafood per week, many commonly consumed varieties of seafood should be avoided because they cannot be consumed at 3 ounces per week by children without the potential of exceeding safe methylmercury limits; examples that should not be consumed include: canned light tuna or white (albacore) tuna, cod, perch, black sea bass. For a complete list please see: **FDA.gov/fishadvice** and **EPA.gov/fishadvice**.

[g] Foods are assumed to be in nutrient-dense forms, lean or low-fat and prepared with minimal added saturated fat, added sugars, refined starches, or salt. If all food choices to meet food group recommendations are in nutrient-dense forms, a small number of calories remain within the overall limit of the pattern (i.e., limit on calories for other uses). The amount of calories depends on the total calorie level of the pattern and the amounts of food from each food group required to meet nutritional goals. Calories up to the specified limit can be used for added sugars, added refined starches, saturated fat, alcohol, or to eat more than the recommended amount of food in a food group.

NOTE: The total dietary pattern should not exceed *Dietary Guidelines* limits for added sugars, saturated fat, and alcohol; be within the Acceptable Macronutrient Distribution Ranges for protein, carbohydrate, and total fats; and stay within calorie limits. Values are rounded.

Table A3-3

Healthy Vegetarian Dietary Pattern for Toddlers Ages 12 Through 23 Months Who Are No Longer Receiving Human Milk or Infant Formula, With Daily or Weekly Amounts From Food Groups, Subgroups, and Components

CALORIE LEVEL OF PATTERN [a]	**700**	**800**	**900**	**1,000**
FOOD GROUP OR SUBGROUP[b,c]	**Daily Amount of Food From Each Group**[d] (Vegetable and protein foods subgroup amounts are per week.)			
Vegetables (cup eq/day)	**1**	**1**	**1**	**1**
	Vegetable Subgroups in Weekly Amounts			
Dark-Green Vegetables (cup eq/wk)	½	½	½	½
Red and Orange Vegetables (cup eq/wk)	2 ½	2 ½	2 ½	2 ½
Beans, Peas, Lentils (cup eq/wk)	¾	¾	¾	¾
Starchy Vegetables (cup eq/wk)	2	2	2	2
Other Vegetables (cup eq/wk)	1 ½	1 ½	1 ½	1 ½
Fruits (cup eq/day)	**½**	**¾**	**1**	**1**
Grains (ounce eq/day)	**1 ¾**	**2 ¼**	**2 ¾**	**3**
Whole Grains (ounce eq/day)	1 ¼	1 ¾	2	2
Refined Grains (ounce eq/day)	½	½	¾	1
Dairy (cup eq/day)	**1 ½**	**1 ¾**	**1 ¾**	**2**
Protein Foods (ounce eq/day)	**1**	**1**	**1**	**1**
	Protein Foods Subgroups in Weekly Amounts			
Eggs (ounce eq/wk)	3 ½	3 ½	3 ½	3 ½
Nuts, Seeds, Soy Products (ounce eq/wk)	4	4	4	4
Oils (grams/day)	**9**	**8 ½**	**10**	**15**

[a] Calorie level ranges: Energy levels are calculated based on median length and body weight reference individuals. Calorie needs vary based on many factors. The DRI Calculator for Healthcare Professionals available at **nal.usda.gov/fnic/dri-calculator/** can be used to estimate calorie needs based on age, sex, and weight.

[b] Definitions for each food group and subgroup and quantity (i.e., cup or ounce) equivalents are provided in ***Chapter 1*** and are compiled in **Table A3-2 (footnote c)**.

[c] All foods are assumed to be in nutrient-dense forms and prepared with minimal added sugars, refined starches (which are a source of calories but few or no other nutrients), or sodium. Food are also lean or in low-fat forms with the exception of dairy which includes whole-fat fluid milk, reduced-fat plain yogurts, and reduced-fat cheese. There are no calories available for additional added sugars, saturated fat, or to eat more than the recommended amount of food in a food group.

[d] In some cases, food subgroup amounts are greatest at the lower calorie levels to help achieve nutrient adequacy when relatively small number of calories are required.

Table A3-4

Healthy Vegetarian Dietary Pattern for Ages 2 and Older, With Daily or Weekly Amounts From Food Groups, Subgroups, and Components

CALORIE LEVEL OF PATTERN[a]	**1,000**	**1,200**	**1,400**	**1,600**	**1,800**	**2,000**	**2,200**	**2,400**	**2,600**	**2,800**	**3,000**	**3,200**
FOOD GROUP OR SUBGROUP[b]	**Daily Amount**[c] **of Food From Each Group** (Vegetable and protein foods subgroup amounts[b] are per week.)											
Vegetables (cup eq/day)	**1**	**1 ½**	**1 ½**	**2**	**2 ½**	**2 ½**	**3**	**3**	**3 ½**	**3 ½**	**4**	**4**
	Vegetable Subgroups in Weekly Amounts											
Dark-Green Vegetables (cup eq/wk)	½	1	1	1 ½	1 ½	1 ½	2	2	2 ½	2 ½	2 ½	2 ½
Red and Orange Vegetables (cup eq/wk)	2 ½	3	3	4	5 ½	5½	6	6	7	7	7½	7½
Beans, Peas, Lentils (cup eq/wk)[d]	½	½	½	1	1 ½	1 ½	2	2	2 ½	2 ½	3	3
Starchy Vegetables (cup eq/wk)	2	3 ½	3 ½	4	5	5	6	6	7	7	8	8
Other Vegetables (cup eq/wk)	1 ½	2 ½	2 ½	3 ½	4	4	5	5	5 ½	5 ½	7	7
Fruits (cup eq/day)	**1**	**1**	**1 ½**	**1 ½**	**1 ½**	**2**	**2**	**2**	**2**	**2 ½**	**2 ½**	**2 ½**
Grains (ounce eq/day)	**3**	**4**	**5**	**5 ½**	**6 ½**	**6 ½**	**7 ½**	**8 ½**	**9 ½**	**10 ½**	**10 ½**	**10 ½**
Whole Grains (ounce eq/day)	1 ½	2	2 ½	3	3 ½	3 ½	4	4 ½	5	5 ½	5 ½	5 ½
Refined Grains (ounce eq/day)	1 ½	2	2 ½	2 ½	3	3	3 ½	4	4 ½	5	5	5
Dairy (cup eq/day)	**2**	**2 ½**	**2 ½**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**
Protein Foods (ounce eq/day)	**1**	**1 ½**	**2**	**2 ½**	**3**	**3 ½**	**3 ½**	**4**	**4 ½**	**5**	**5 ½**	**6**
	Protein Foods Subgroups in Weekly Amounts											
Eggs (ounce eq/wk)	2	3	3	3	3	3	3	3	3	4	4	4
Beans, Peas, Lentils (cup eq/wk)[d]	1	2	4	4	6	6	6	8	9	10	11	12
Soy Products (ounce eq/wk)	2	3	4	6	6	8	8	9	10	11	12	13
Nuts, Seeds (ounce eq/wk)	2	2	3	5	6	7	7	8	9	10	12	13
Oils (grams/day)	**15**	**17**	**17**	**22**	**24**	**27**	**29**	**31**	**34**	**36**	**44**	**51**
Limit on Calories for Other Uses (kcal/day)[e]	**170**	**140**	**160**	**150**	**150**	**250**	**290**	**350**	**350**	**350**	**390**	**500**
Limit on Calories for Other Uses (%/day)	17%	12%	11%	9%	8%	13%	13%	15%	13%	13%	13%	16%

[a, b, c] See **Table A3-2 footnotes**.

[d] About half of beans, peas, lentils are shown as vegetables, in cup eq, and half as protein foods, in ounce eq. Beans, peas, lentils in the patterns, in cup eq, is the amount in the vegetable group plus the amount in protein foods group (in ounce eq) divided by four.

[e] See **Table A3-2 footnotes**.

NOTE: The total dietary pattern should not exceed *Dietary Guidelines* limits for added sugars, saturated fat, and alcohol; be within the Acceptable Macronutrient Distribution Ranges for protein, carbohydrate, and total fats; and stay within calorie limits. Values are rounded.

Table A3-5

Healthy Mediterranean-Style Dietary Pattern for Ages 2 and Older, With Daily or Weekly Amounts From Food Groups, Subgroups, and Components

CALORIE LEVEL OF PATTERN[a]	1,000	1,200	1,400	1,600	1,800	2,000	2,200	2,400	2,600	2,800	3,000	3,200
FOOD GROUP OR SUBGROUP[b]	**Daily Amount**[c] **of Food From Each Group** (Vegetable and protein foods subgroup amounts are per week.)											
Vegetables (cup eq/day)	**1**	**1 ½**	**1 ½**	**2**	**2 ½**	**2 ½**	**3**	**3**	**3 ½**	**3 ½**	**4**	**4**
	Vegetable Subgroups in Weekly Amounts											
Dark-Green Vegetables (cup eq/wk)	½	1	1	1 ½	1 ½	1 ½	2	2	2 ½	2 ½	2 ½	2 ½
Red and Orange Vegetables (cup eq/wk)	2 ½	3	3	4	5 ½	5 ½	6	6	7	7	7 ½	7 ½
Beans, Peas, Lentils (cup eq/wk)	½	½	½	1	1 ½	1 ½	2	2	2 ½	2 ½	3	3
Starchy Vegetables (cup eq/wk)	2	3 ½	3 ½	4	5	5	6	6	7	7	8	8
Other Vegetables (cup eq/wk)	1 ½	2 ½	2 ½	3 ½	4	4	5	5	5 ½	5 ½	7	7
Fruits (cup eq/day)	**1**	**1**	**1 ½**	**2**	**2**	**2 ½**	**2 ½**	**2 ½**	**2 ½**	**3**	**3**	**3**
Grains (ounce eq/day)	**3**	**4**	**5**	**5**	**6**	**6**	**7**	**8**	**9**	**10**	**10**	**10**
Whole Grains (ounce eq/day)[d]	1 ½	2	2 ½	3	3	3	3 ½	4	4 ½	5	5	5
Refined Grains (ounce eq/day)	1 ½	2	2 ½	2	3	3	3 ½	4	4 ½	5	5	5
Dairy (cup eq/day)[d]	**2**	**2 ½**	**2 ½**	**2**	**2**	**2**	**2**	**2 ½**	**2 ½**	**2 ½**	**2 ½**	**2 ½**
Protein Foods (ounce eq/day)	**2**	**3**	**4**	**5 ½**	**6**	**6 ½**	**7**	**7 ½**	**7 ½**	**8**	**8**	**8**
	Protein Foods Subgroups in Weekly Amounts											
Meats, Poultry, Eggs (ounce eq/wk)	10	14	19	23	23	26	28	31	31	33	33	33
Seafood (ounce eq/wk)[e]	3	4	6	11	15	15	16	16	17	17	17	17
Nuts, Seeds, Soy Products (ounce eq/wk)	2	2	3	4	4	5	5	5	5	6	6	6
Oils (grams/day)	**15**	**17**	**17**	**22**	**24**	**27**	**29**	**31**	**34**	**36**	**44**	**51**
Limit on Calories for Other Uses (kcal/day)[f]	**130**	**80**	**90**	**120**	**140**	**240**	**250**	**280**	**300**	**330**	**400**	**540**
Limit on Calories for Other Uses (%/day)	13%	7%	6%	8%	8%	12%	11%	12%	12%	12%	13%	17%

[a,b,c] See **Table A3-2 footnotes**.

[d] Amounts of dairy recommended for children and adolescents are as follows, regardless of the calorie level of the pattern: for age 2 years, 2 cup-eq per day; for ages 3 through 8 years, 2 ½ cup-eq per day; for ages 9 through 18 years, 3 cup-eq per day.

[e] The U.S. Food and Drug Administration (FDA) and the U.S. Environmental Protection Agency (EPA) provide joint advice regarding seafood consumption to limit methylmercury exposure for women who might become or are pregnant or lactating, and children. Depending on body weight, some women and children should choose seafood lowest in methylmercury or eat less seafood than the amounts in the Healthy U.S.-Style Dietary Pattern. For more information, see the FDA and EPA websites at **FDA.gov/fishadvice** and **EPA.gov/fishadvice**.

[f] Foods are assumed to be in nutrient-dense forms; lean or low-fat; and prepared with minimal added sugars, refined starches (which are a source of calories but few or no other nutrients), saturated fat, or sodium. If all food choices to meet food group recommendations are in nutrient-dense forms, a small number of calories remain within the overall limit of the pattern (i.e., limit on calories for other uses). The amount of calories depends on the total calorie level of the pattern and the amounts of food from each food group required to meet nutritional goals. Calories up to the specified limit can be used for added sugars, saturated fat, and/or alcohol (for nonpregnant adults of legal drinking age only) or to eat more than the recommended amount of food in a food group.

NOTE: The total dietary pattern should not *Dietary Guidelines* limits for added sugars, saturated fat, and alcohol; be within the Acceptable Macronutrient Distribution Ranges for protein, carbohydrate, and total fats; and stay within calorie limits. Values are rounded.

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